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1988

WYOMING MINERAL YEARBOOK

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Economic Development
and
Stabilization Board
Energy Division

1988

WYOMING MINERAL YEARBOOK

Prepared by:

Dale S. Hoffman

and

Angie Tanner

The Wyoming

Economic Development

and

Stabilization Board

Cheyenne, Wyoming

December 1988

Duplication or quotation of material in this publication is welcomed, but it is requested that the Energy Division, Economic Development and Stabilization Board be credited. Development and publication expenses were funded with the assistance of the U.S. Department of Energy Grant DE-FG 48-84R808037.

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INTRODUCTION

The minerals industry is by far the largest single contributor to the of the State of Wyoming. 1988 valuation on minerals produced in 1987 was $3,587,543,292. This is 61% of the state's total valuation and placed Wyoming among the top ten mineral producing states in the nation.

This report outlines the distribution and status of the minerals industry in Wyoming during 1986. The primary mineral commodities produced in the state are reviewed individually and a section on historical mineral production is included in the Yearbook. This section enumerates yearly production figures for the state's primary mineral commodities: bentonite, coal, natural gas, petroleum, trona and uranium from their first commercial development to 1986. The production projections for the next five years give an indication of growth or decline of a particular mineral commodity in both the state and individual counties. Estimates beyond five years are not made because of increasing difficulty in making accurate predictions due to changing economic factors, governmental regulations, decreasing reserves and international developments.

The narrative sections present an overview of the minerals produced in the state and the status of the mineral industry in each county.

The reader desiring more detailed information on the location of various projects or resources is referred to the Oil and Gas Map of Wyoming and the Mines and Minerals Map of Wyoming and the Construction Materials Map available from the Geological Survey of Wyoming and the EDSB Mineral Development Monitoring System.

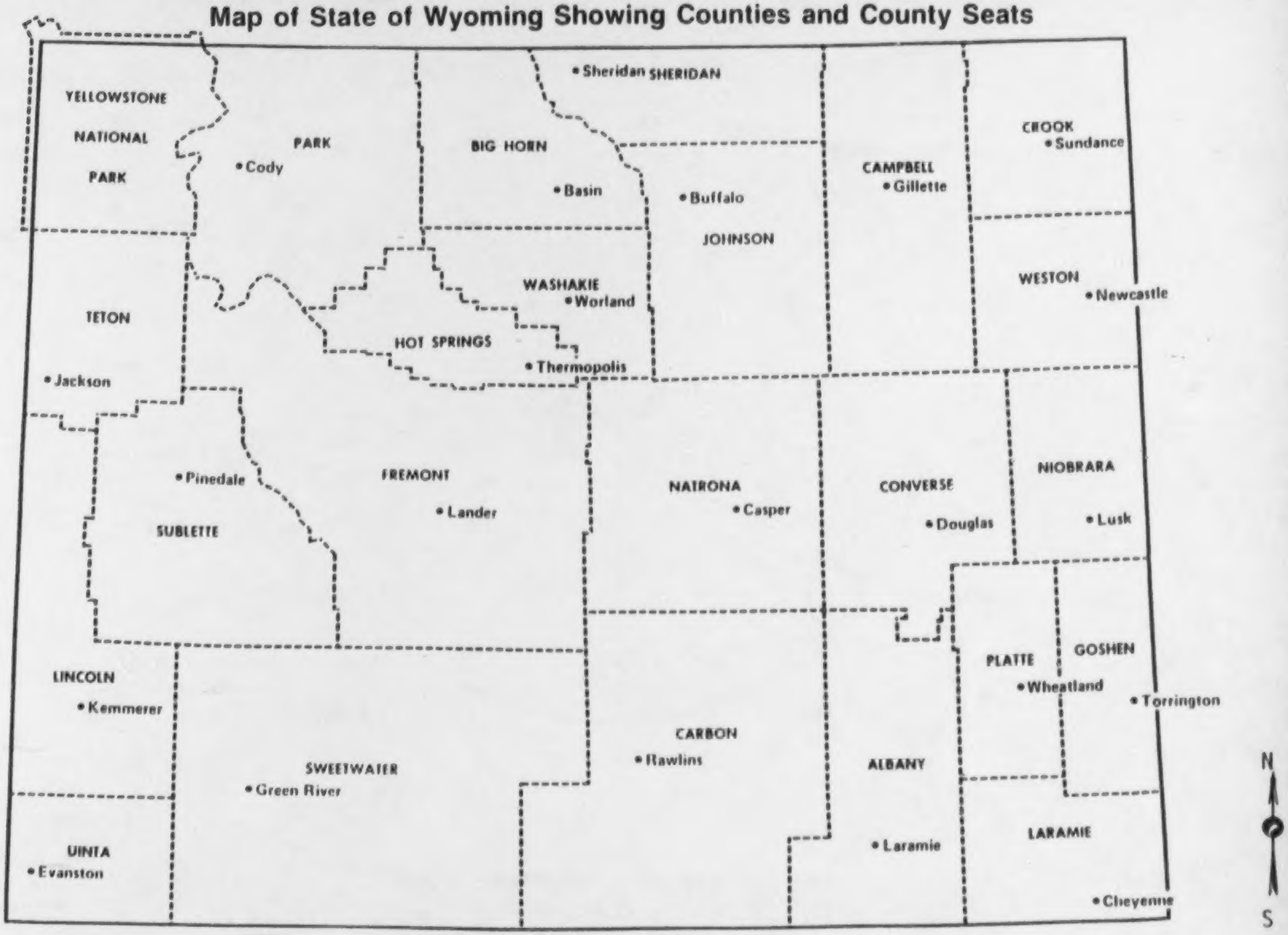
Bar graphs for county mineral valuation were prepared for those counties where minerals accounted for at least 25% of the total assessed valuation.

Production figures in this Yearbook are net or taxable figures and do not include federal or state royalty production because it is not included in the assessed valuation. Appreciation is extended to the mineral companies of Wyoming for their assistance and cooperation in providing estimates of production during the next five years. Also, help and information provided by Don Bright, Ken Uhrich, Jim Felton and Rocky Hopson of the Ad Valorem Tax Division of the State Department of Revenue and Taxation proved invaluable. Special thanks are extended to Gary Glass and his staff of the Geological Survey of Wyoming for assistance in estimating future production levels. Jon Jacquot of the Wyoming Public Service Commission provided information and assistance in compiling energy consumption statistics. Valuable data was supplied by Don Basko of the Wyoming Oil and Gas Conservation Commission. Joe Evans of the EDS Board and Mary Byrnes and Buck McVeigh of Research and Statistics provided valuable help in graph preparation.

Any questions or comments may be addressed to:

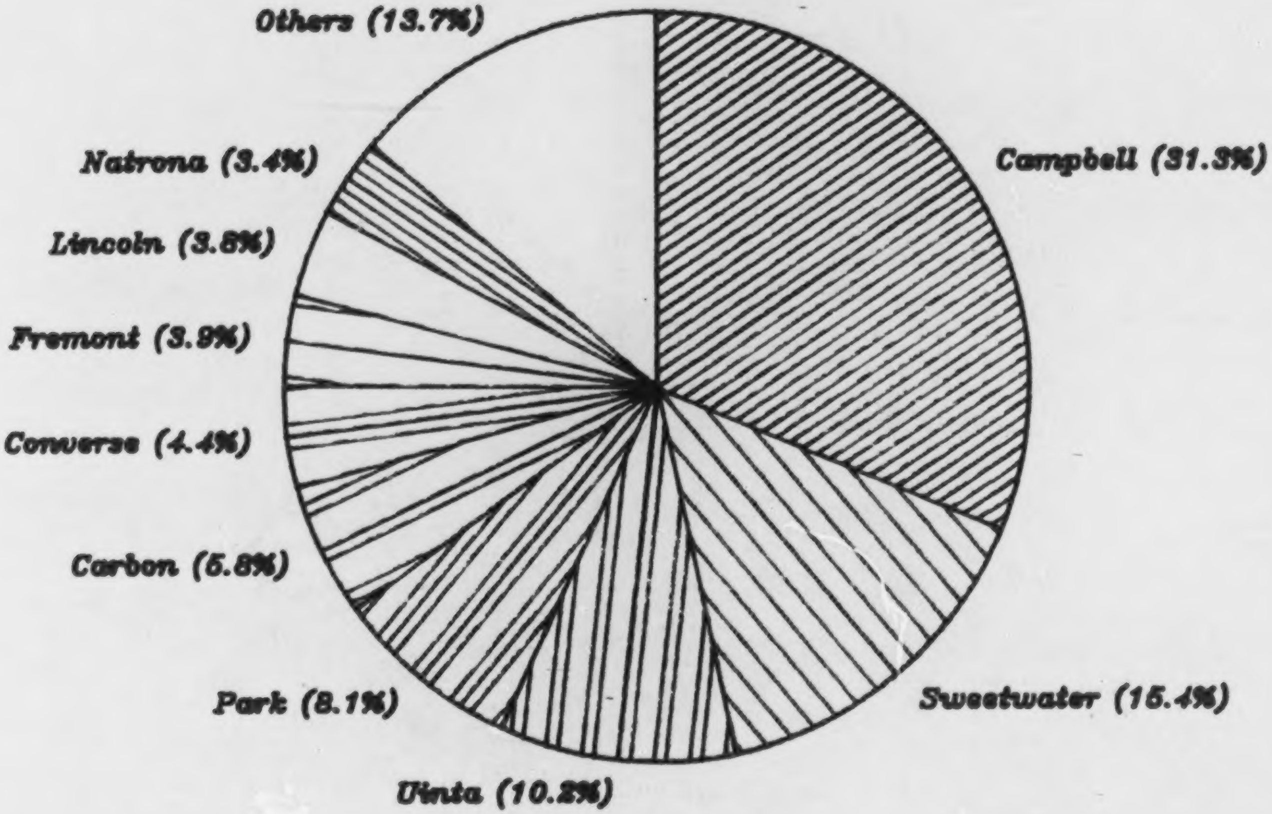
Economic Development and Stabilization Board
Herschler Building, Third Floor
Cheyenne, Wyoming 82002

Map of State of Wyoming Showing Counties and County Seats


YELLOWSTONE
NATIONAL
PARK
PARK
Cody
BIG HORN
Basin
Sheridan
SHERIDAN
Buffalo
JOHNSON
CAMPBELL
Gillette
CROOK
Sundance
WESTON
Newcastle
WASHAKIE
Worland
HOT SPRINGS
Thermopolis
TETON
Jackson
Pinedale
SUBLETTE
FREMONT
Lander
NATRONA
Casper
CONVERSE
Douglas
NIOBRARA
Lusk
PLATTE
Wheatland
GOSHEN
Torrington
LINCOLN
Kemmerer
SWEETWATER
Green River
CARBON
Rawlins
ALBANY
Laramie
LARAMIE
Cheyenne
UINTA
Evanston
N
S

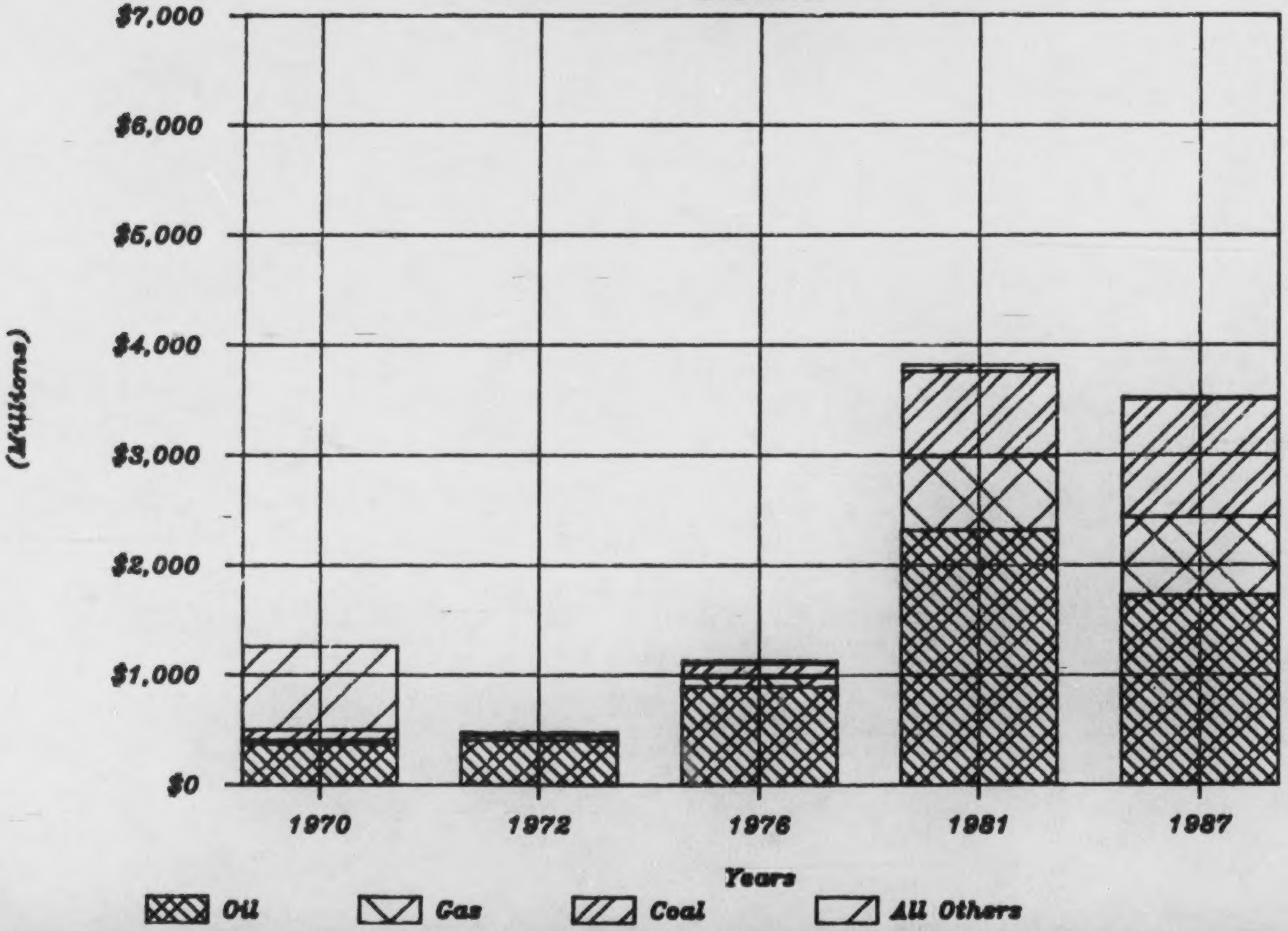
Total 1988 Assessed Mineral Valuation

Total Valuation = $3,587,543,292



Assessed Valuation on Production

Statewide



WYOMING MINERAL INDUSTRY

TAX TABLES

The ten tables in this section illustrate the tax situation for the Wyoming Minerals Industry since 1969. The significance of 1969 is that it was the year the severance tax on minerals was initiated.

Tables are as follows:

I Assessed Valuation on Production, 1969 - 1988
II Ad Valorem Tax Paid on Production, 1969 - 1988
III Assessed Valuation Per Unit of Production, 1969 - 1988
IV Severance Tax Collections, 1969 - 1988
V Severance Tax Rates, 1969 - 1988
VI Severance Tax Distribution, 1988
VII Sales and Use Tax - Fiscal Year
VIII Government Royalty
IX Summary Table
X Mineral Income to the State, 1971 - 1988

TABLE I

ASSESSED VALUATION ON PRODUCTION[1]

(In dollars)

	1969	1970	1975	1976	1977	1978	1979	1980
Oil	342,095,561	393,521,962	833,099,266	894,047,178	871,638,686	933,988,779	1,030,279,506	1,156,955,262
Oil (Stripper)					54,635,836	62,166,335	69,151,578	128,228,914
Gas	32,568,891	35,896,344	65,041,856	88,861,898	132,925,715	223,675,393	264,389,250	456,131,295
Coal	5,158,890	6,604,717	70,658,473	124,656,316	182,641,777	299,778,223	408,906,655	572,648,542
Uranium	11,973,833	12,887,471	19,519,275	20,829,685	41,830,148	66,240,921	73,196,538	69,290,431
Trona	7,206,779	10,792,192	33,537,931	44,278,752	61,604,249	78,660,136	79,793,896	108,890,862
Others	8,435,480	10,435,621	23,009,044	26,252,467	29,872,572	33,404,356	35,025,749	41,893,010
Totals	407,439,434	470,138,307	1,044,865,845	1,198,926,296	1,375,149,102	1,697,914,143	1,960,744,172	2,543,038,316

	1981	1982	1983	1984	1985	1986	1987	1988
Oil	2,113,492,444	3,399,464,789	2,980,583,636	2,788,082,073	2,926,290,488	2,687,685,876	1,343,892,041	1,551,590,991
Oil (Stripper)	206,202,114	206,223,009	201,804,826	198,338,861	201,873,856	201,675,444	96,370,615	174,465,837
Gas	671,087,378	978,407,639	1,132,051,442	1,258,272,277	1,484,730,803	1,238,247,618	889,888,628	717,673,951
Coal	773,633,734	989,695,692	1,113,645,140	1,151,048,135	1,230,917,455	1,256.360,635	1,111,486,981	1,006,229,601
Uranium	80,981,002	77,239,481	45,555,994	50,837,054	21,750,901	16,916,156	18,019,557	6,550,057
Trona	138,925,498	147,417,617	121,583,686	104,500,003	95,792,777	95,839,980	105,566,325	114,546,971
Others	41,828,458	49,758,099	29,578,806	26,707,789	26,270,866	17,196,174	16,324,082	16,485,884
Totals	4,026,165,628	5,852,764,024	5,624,803,530	5,577,786,192	5,987,627,146	5,514,921,883	3,581,548,229	3,587,543,292

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[1] Assessed Valuation is on the previous year's production.

Source: Department of Revenue and Taxation,
Ad Valorem Tax Division.

Prepared by: Dale S. Hoffman

December 1988

TABLE II

AD VALOREM TAX PAID ON PRODUCTION[1]
(In dollars)

	1969	1970	1975	1976	1977	1978	1979	1980	1981
Oil	18,630,403	21,250,757	44,062,703	52,011,268	53,242,493	57,655,255	65,640,994	73,114,675	141,067,719
Oil (Stripper)					3,337,395	3,837,536	4,405,838	8,103,525	N/A
Gas	1,818,047	2,026,025	3,791,780	5,416,016	8,363,221	14,157,450	16,951,670	29,195,909	42,834,889
Coal	278,203	347,724	3,991,473	7,321,256	11,216,632	18,962,219	25,551,858	37,216,429	48,882,281
Uranium	745,436	800,216	1,181,988	1,268,260	2,661,655	4,322,847	4,948,183	4,599,360	5,407,377
Trona	439,181	627,674	2,390,070	2,089,771	4,239,604	5,898,724	5,698,082	7,783,519	10,095,716
Others	496,108	615,480	1,363,208	1,648,239	1,919,772	2,145,881	3,212,339	2,712,807	2,885,474
Totals	22,407,378	25,667,876	56,781,222	70,754,810	84,981,772	106,979,912	126,408,964	162,726,224	251,173,456

	1982	1983	1984	1985	1986	1987	1988
Oil	208,758,682	200,728,469	185,908,225	189,946,540	171,648,252	88,950,870	100,915,478
Oil (Stripper)	12,664,006	13,590,618	13,225,167	13,103,632	12,879,942	6,378,675	11,347,258
Gas	62,548,833	75,104,760	83,480,988	98,634,245	86,586,112	60,991,867	48,430,791
Coal	65,921,399	76,171,728	77,605,647	80,239,656	78,515,051	72,296,114	63,353,498
Uranium	4,881,942	2,931,559	3,313,587	1,348,692	1,142,136	1,193,510	436,646
Trona	10,416,529	8,721,198	7,630,590	7,186,374	8,080,328	9,280,652	8,915,878
Others	3,154,581	1,991,685	1,794,882	3,345,662	3,333,096	2,175,139	1,075,954
Totals	368,345,972	379,240,017	372,959,086	393,652,409	362,184,917	239,091,688	234,475,503

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[1] Taxes are paid on previous year's production.

Sources: Department of Revenue and Taxation,
Ad Valorem Tax Division.

Petroleum Association of Wyoming.

Prepared by: Dale S. Hoffman

December 1988

TABLE III

ASSESSED VALUATION PER UNIT OF PRODUCTION
(In dollars)

	1969	1970	1975	1976	1977	1978	1979	1980	1981	1982	1983
Oil (bbl.)	2.63	2.80	6.71	7.41	7.51	7.81	8.74	10.50	20.32	32.26	29.45
Oil (stripper)[1]					(11.85)	(13.01)	(13.89)	(23.53)	N/A	(34.94)	(31.60)
Gas (mcf)	.15	.15	.24	.36	.51	.82	.97	1.37	1.92	2.77	3.22
Coal (ton)	1.40	1.50	3.54	5.39	6.03	6.73	7.24	8.32	8.55	10.06	10.71
Uranium (ton)	6.05	7.90	8.53	7.61	12.66	16.62	13.27	12.57	15.13	16.89	21.69
Trona (ton)	2.28	2.91	4.74	6.00	7.00	7.70	8.00	9.25	11.43	12.51	12.07

	1984	1985	1986	1987	1988	19 Year Increase $	19 Year Increase %
Oil (bbl.)	26.91	26.56	23.33	12.90	15.17	4.90	577
Oil (stripper)[1]	(29.19)	28.41	25.26	13.84	16.32	2.48	-
Gas (mcf)	3.19	3.32	3.01	2.52	1.76	1.61	1173
Coal (ton)	10.67	9.64	9.30	8.67	7.88	6.18	541
Uranium (ton)	16.67	13.31	30.96	79.44	26.83	20.78	443
Trona (ton)	9.91	8.73	8.94	8.86	9.22	6.94	404

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[1] Stripper wells (10 bbls. per day or less) pay 4%.

Sources: Department of Revenue and Taxation,
Ad Valorem Tax Division.
Petroleum Association of Wyoming

Prepared by: Dale S. Hoffman

December 1988

TABLE IV

SEVERANCE TAX COLLECTIONS[1,2]

(In dollars)

	1969	1970	1975	1976	1977	1978	1979	1980
Oil	3,436,531	3,934,661	32,689,133	34,781,276	35,958,264	38,602,878	42,594,321	48,842,788
Gas	323,794	357,047	2,604,405	3,554,476	5,317,029	8,947,016	10,575,570	18,245,252
Coal	51,592	63,778	2,862,339	4,986,253	17,716,252	30,277,601	42,935,199	60,128,097
Uranium	119,739	128,838	390,395	416,594	2,300,658	3,643,251	4,025,810	3,810,974
Trona	72,068	107,922	1,341,517	1,771,150	3,388,234	4,326,307	4,388,664	5,988,997
Others	84,355	104,362	463,772	527,052	597,454	668,087	700,515	837,859
Totals	4,088,079	4,696,608	40,315,561	46,034,800	65,277,891	86,465,140	105,219,989	137,853,967

	1981	1982	1983	1984	1985	1986	1987	1988
Oil	212,216,807	186,209,348	173,159,464	183,652,383	169,328,171	84,488,347	100,074,092	40,650,600
Gas	58,704,458	71,149,850	77,010,279	89,283,848	74,294,857	33,393,318	43,060,437	28,045,898
Coal	103,918,048	116,873,160	121,635,765	128,444,924	130,810,704	116,604,337	85,502,132	43,251,305
Uranium	4,248,171	2,426,365	2,838,661	1,196,300	930,389	991,076	360,253	129,905
Trona	8,107,969	6,780,896	6,312,251	5,258,603	5,326,199	5,806,148	6,300,083	2,878,861
Others	995,164	740,484	461,613	325,418	343,925	326,480	329,718	
Totals	388,190,617	384,180,103	381,418,027	408,171,476	381,034,245	261,609,906	235,626,715	118,092,536

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December 1988

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[1] Severance Tax is paid on previous year's production.

[2] Severance Tax will be paid quarterly starting in 1981.

*First two quarters of 1988.

Source: Department of Revenue and Taxation,
Ad Valorem Tax Division,
Petroleum Association of Wyoming.

TABLE V

SEVERANCE TAX RATES

	1969	1970	1975	1976	1977	1978	1979	1980
Oil	10 Mills (1%)	1.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Gas	10 Mills (1%)	1.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Coal	10 Mills (1%)	1.0%	4.4%	4.8%	9.7%	10.1%	10.5%	10.5%
Uranium	10 Mills (1%)	1.0%	2.0%	2.0%	5.5%	5.5%	5.5%	5.5%
Trona	10 Mills (1%)	1.0%	4.0%	4.0%	5.5%	5.5%	5.5%	5.5%
Others	10 Mills (1%)	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

	1981	1982	1983	1984	1985	1986	1987	1988
Oil	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Gas	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Coal	10.5%	10.5%	10.5%	10.5%	10.5% (surface) 7.25% (underground)*	10.5% (surface) 7.25% (underground)*	10.5% (surface) 7.25% (underground)*	8.5% (surface) 5.25% (underground)*
Uranium	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Trona	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Others	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

*Change made by 1984 Legislature

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December 1988

TABLE VI

SEVERANCE TAX DISTRIBUTION (1986)

Proceeds To	Coal*	Trona	Uranium	Oil*	Gas	Other
Permanent Wyoming Mineral Trust Fund	2.0%	1.5%	1.5%	1.667%	1.667%	
General Fund	2.0%	2.0%	2.0%	2.000%	2.000%	2.0%
Wyoming Water Development Account	1.5%			.167%	.167%	
Highway Fund	1.0%	0.9%	0.9%	.666%	.666%	
Capital Facilities Revenue Account	1.5%	0.6%	0.6%			
Counties				.250%	.250%	
Cities and Towns				.750%	.750%	
Worker's Compensation Diversion	.5%	.5%	.5%	.5%	.5%	
Total	10.5%	5.5%	5.5%	6.000%	6.000%	2.0%

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*Stripper Oil is 4.0%.
*Underground coal is 7.25%

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TABLE VII

SALES AND USE TAX (FISCAL YEAR)
(In dollars)

		1975	1976	1977	1978	1979	1980	1981
Oil and	Sales	3,224,274	4,082,391	4,837,746	6,803,898	8,581,968	12,348,619	16,079,610
Natural Gas	Use	428,594	380,383	494,689	663,220	1,270,079	1,659,281	2,037,239
Coal	Sales	84,439	78,312	238,357	318,052	463,133	519,766	841,075
	Use	680,171	661,775	1,441,992	1,451,495	2,327,323	1,177,761	930,267
Metal Mining	Sales	83,042	149,608	187,762	191,480	573,470	191,266	152,566
	Use	358,945	670,004	868,173	1,171,804	1,218,530	957,484	566,053
Other Mining	Sales	405,655	429,123	459,592	734,697	1,231,801	1,561,663	2,135,082
	Use	895,296	727,911	1,425,173	1,330,654	1,415,269	1,705,501	2,035,418
Totals	Sales	3,797,410	4,739,434	5,723,457	8,075,098	10,850,372	14,621,314	19,208,333
	Use	2,363,006	2,440,073	4,230,027	4,850,379	5,231,201	5,500,027	5,568,977
	Both	6,160,416	7,179,507	9,953,484	12,925,477	16,081,573	20,121,341	24,777,310

		1982	1983	1984	1985	1986	1987	1988
Oil and	Sales	22,035,697	15,218,668	13,361,873	11,207,576	9,845,347	982,608	6,210,534
Natural Gas	Use	7,313,596	3,523,801	3,205,904	3,289,737	17,220,121	69,947	1,419,940
Coal	Sales	734,329	559,876	504,977	859,055	1,163,794	959,208	1,519,090
	Use	2,747,266	3,351,329	4,620,216	5,233,499	3,132,693	2,138,937	3,602,674
Metal Mining	Sales	244,464	262,155	3,737	53,381	240,414	8,572	566,683
	Use	325,782	179,114	223,504	49,259	448,884	0	268,296
Other Mining	Sales	2,801,968	1,816,543	1,220,018	1,052,177	964,348	3,907	0
	Use	1,829,396	1,940,381	1,201,420	1,014,330	1,088,222	4	7,029,472
Totals	Sales	25,816,458	17,857,242	15,090,605	13,172,189	12,213,903	1,954,295	8,296,307
	Use	12,216,040	8,994,625	9,251,044	9,586,825	21,889,920	2,208,888	12,320,382
	Both	38,032,498	26,851,867	24,341,649	22,759,014	34,103,823	4,163,183	20,616,689

Source: Department of Revenue and Taxation

Prepared by: Dale S. Hoffman

December 1988

TABLE VIII

GOVERNMENT ROYALTY (MINERAL ROYALTY RETURNS TO STATE)
(In dollars)

1970	1975	1976	1977	1978	1979	1980
18,624,702	34,450,233	49,433,822	58,971,484	69,763,079	76,523,544	95,100,847

1981	1982	1983	1984	1985	1986	1987	1988
115,062,289	119,955,519	152,195,146	165,092,468*	221,650,911**	188,467,235	131,804,697	160,262,662

Prior to 7/1/76 the State received 37½% of the Federal Mineral Royalties, after 7/1/76 the State received 50%.

These funds are distributed by W. S. Section 9-4-601 as follows:

Foundation Program	Highway Commission	University of Wyoming	Highway Commission for Counties	Incorporated Cities & Towns	Capitol Construction Cities, Towns, Special Districts
34 1/2%	26 1/4%	6 3/4%	2 1/4%	7 1/2%	7 1/2%

Capitol Construction Schools, Community Colleges and State
15 1/4%

Source: State Treasurer.

Prepared by: Dale S. Hoffman

December 1988

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*The percentages above reflect the changes made by the 1984 legislature.
**Amount is inflated due to carry over when reporting changed to quarterly rather than fiscally.

TABLE IX

SUMMARY TABLE

	ASSESSED VALUATION PER UNIT				SEVERANCE TAX				AVERAGE TAX LEVY (MILLS)		TAX AS A PERCENTAGE OF VALUATION-MILL LEVY PLUS SEVERANCE	
	1969	1988	Percent of Increase	Factor of Increase	1969	1988	Percent of Increase	Factor of Increase	1969	1988	1969	1988
Oil	$2.63	$15.28	490%	5.90	1.0%	6.0%	500%	6.0	54.4	65.04	6.44%	12.50%
Gas	.15	1.76	1273	13.73	1.0	6.0	500	6.0	55.8	67.48	6.58	12.75
Coal	1.40	7.58	641	7.41	1.0	8.5	750	8.5	53.9	62.91	6.39	14.79
Uranium	6.05	26.83	5413	64.13	1.0	5.5	450	5.5	62.2	66.66	7.22	12.17
Trona	2.28	9.22	504	5.04	1.0	5.5	450	5.5	60.9	77.84	7.09	13.28

	AVERAGE TAX PAID PER UNIT		INCREASE PER UNIT THROUGH 1988	PERCENTAGE OF INCREASE PER UNIT THROUGH 1988	FACTOR OF INCREASE PER UNIT THROUGH 1988
	1969	1988			
Oil	$0.169	$1.88	$1.71	1012%	11.12
Gas	0.009	0.22	.22	2389%	24.89
Coal	0.089	1.21	1.39	1562%	16.62
Uranium	0.437	3.27	2.83	648%	7.48
Trona	0.183	1.23	.99	539%	6.39

Prepared by: Dale S. Hoffman

December 1988

TABLE X
MINERAL INCOME TO THE STATE OF WYOMING 1971 - 1988[2]
(In dollars per calendar year)

Source	1975	1976	1977	1978	1979	1980	1981
Ad Valorem	56,781,222	70,754,810	84,981,772	106,979,912	126,408,964	162,726,224	251,173,456
Severance	40,315,561	46,034,800	65,277,891	86,465,140	105,219,989	137,853,969	388,190,167
Sales and Use[1]	6,160,415	7,179,457	9,953,382	12,925,477	18,987,778	20,121,341	24,777,310
U.S. Rent and Royalty Returns*	34,450,233	49,433,821	58,971,484	69,763,078	76,523,544	95,100,847	115,062,289
State Rent	3,648,785	3,372,336	3,532,586	3,946,697	3,504,505	4,716,653	5,487,607
State Royalties	10,413,284	12,160,309	15,254,011	15,560,977	16,248,479	30,814,994	51,011,313
General Fund Income (filing fees, etc.)	2,143,956	2,828,505	4,032,739	6,433,216	6,408,160	7,608,030	9,143,841
Total	153,913,456	191,764,035	240,903,865	302,074,497	353,301,419	458,942,058	646,515,667

	1982	1983	1984	1985	1986	1987	1988
Ad Valorem	368,345,972	379,240,017	372,959,086	393,652,409	362,184,917	239,091,688	234,475,503
Severance	384,180,103	381,418,027	408,171,476	381,034,245	261,609,906	235,626,715	118,092,536[2]
Sales and Use[1]	38,032,499	26,851,857	24,341,649	22,759,014	34,103,823	4,163,183	20,616,689
U.S. Rent and Royalty Returns*	119,955,519	152,195,146	165,092,468	221,650,911	188,467,235	131,804,697	160,262,662
State Rent	6,358,149	6,547,641	5,649,863	12,261,674	6,713,567	2,333,149	2,101,286
State Royalties	62,113,790	64,615,059	56,726,182	59,142,728	54,222,959	30,052,219	36,107,357
General Fund Income (filing fees, etc.)	15,350,121	13,240,427	10,976,503	3,716,017	2,052,011	406,541	147,753
Total	994,336,153	1,024,108,184	1,093,917,227	1,093,889,998	896,304,618	641,448,192	571,803,786

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*Prior to 7/1/76 the State received 37.5% of the Federal Mineral Royalties; after 7/1/76 the State received 50%.

Prepared by: The Geological Survey of Wyoming.

Sources: Economic Development and Stabilization Board, Department of Revenue and Taxation, State Land Commission, and State Treasurer. November 1987

Prepared by: Dale S. Hoffman
December 1988

[1] This only includes Metal Mining, Coal Mining, Miscellaneous Mining and Oil and Gas.

[2] Severance Tax Collections are for the first two quarters of 1988 only.

WYOMING MINERAL COMMODITIES REVIEW

1988

BENTONITE

Bentonite is a clay mineral which is the result of the alteration of volcanic ash. Wyoming bentonite originated from volcanic ash ejected in western Wyoming and Idaho during the late Cretaceous period about 120,000,000 years ago. Prevailing westerly winds blew the ash eastward and deposited it in the areas now occupied by bentonite deposits. Wyoming bentonite occurs in the Big Horn Basin, the southern Powder River Basin, and along the western edge of the Black Hills in the northeastern corner of the state.

Bentonite is a clay mineral composed of microscopic platelets consisting of layers of aluminum hydroxide held between layers of silicate atoms. These platelets are stacked one on top of the other. Water can penetrate between layers of platelets, causing the entire structure to swell. Wyoming bentonite has sodium atoms interspersed between these layers of platelets at intervals. Other types of bentonite have calcium between the platelet layers. Sodium bentonite has greatly increased swelling characteristics. Wyoming sodium bentonite, when wet, increases as much as fifteen times its original volume.

Bentonite was used by area Indians as a bleaching clay and washing agent before the white man ventured into what is now Wyoming. Bentonite bogs or "soap holes" caused the loss of some cattle to pioneers, but it was utilized as an emergency substitute for axle grease, as a curative pack for inflamed horses' hoofs and as waterproofing for the roofs of dwellings.

Bentonite was originally named taylorite for William Taylor of Rock Creek, who first made commercial shipments of the clay in 1888. Dr. S. H. "Sam" Knight, State Geologist of Wyoming, renamed the clay bentonite when he learned that taylorite had previously been used in England as the name for another mineral. The term bentonite comes from the Fort Benton shale member of the Mowry formation, where the mineral occurs.

The first sales of Wyoming bentonite were to eastern plants for use in the manufacture of cosmetics. Production remained at a low level until the 1920's, when bentonite's usefulness as a binding agent in foundry sand and as an additive to oil well drilling mud were first discovered.

The U. S. Bureau of Mines economic mineral publications first separated bentonite from "other clays" in 1931. The Wyoming Ad Valorem Tax Division has maintained separate bentonite production statistics since 1927.

The first bentonite mill in Wyoming was constructed at Cheyenne in 1920. The bentonite used in this plant was mined near Medicine Bow. The first mills near the Black Hills, in the northeastern part of the state, were constructed at Newcastle, Osage, and Upton in 1926. Production began in the northern Black Hills near Belle Fourche in the late 1930's. Later, other high grade deposits were discovered in the Big Horn Basin and the Kaycee area of the Power River Basin.

Wyoming bentonite production has risen from 1,141 tons in 1927 to 1,818,502 tons in 1986. The accompanying table shows historical Wyoming bentonite production.

Estimates of remaining Wyoming bentonite reserves vary widely. A report of the American Institute of Mining Engineers gives a figure of 1,149,000,000 tons of in-place reserves, while the 1980 edition of the U. S. Bureau of Mines Minerals Facts and Problems lists reserves of 200,000,000 tons.

Bentonite deposits either crop out at the surface or are buried shallowly, so mining operations consist of removing any overburden present and loading the bentonite into trucks for transport to a mill. Due to shallow burial and the loose unconsolidated nature of the surrounding sediments, no underground mining of bentonite has been attempted. When the bentonite arrives at the mill, it is segregated into piles according to physical characteristics. Materials from these piles are blended to obtain a product with the desired characteristics.

In the mill, the bentonite is first broken into small chunks, screened, and conveyed through a dryer. Temperature of the dryer is critical since temperatures that are too high can destroy the desired properties of the bentonite. Natural gas has been the fuel used in the dryers, but coal and some air drying are now utilized in several operations.

Drying removes about 25% of the moisture in the bentonite. After drying, the clay is pulverized to a variety of size ranges. After sizing, bentonite is either packed in 50, 75, or 100 pound bags or bulk shipped in covered railroad cars.

Currently the single largest market for bentonite is the oil and gas industry, which uses bentonite as a drilling mud additive. Fifty percent of Wyoming bentonite is used in drilling muds. Bentonite's colloidal properties allow heavy well cuttings to be suspended, helps lubricate drilling equipment, cakes the sides of the drill hole to prevent caving, and prevents seeping of ground water into the hole and drilling fluids out of it into surrounding rocks.

The foundry industry consumes 20% of the state's bentonite. Bentonite is used as a molding sand binder. The clay's superior binding properties allow the sand to be formed into shapes that will not fracture or disintegrate during molding operations.

Iron ore pelletizing has used 20% of the bentonite produced. However, it appears that an organic binder may takeover this application.

The remaining 10% is used in a myriad of applications, a sampling of which are: animal feed, ceramics, water softening, cement manufacture, laxatives, crayons, paint, insecticide, reservoir liner, and medicines.

Long range prospects are favorable, but bentonite production will probably flucuate in the near term, as it did this year. New applications such as lining disposal ponds will improve the market, but the bentonite industry will still basically trace the fortunes of the oil and gas drilling industry.

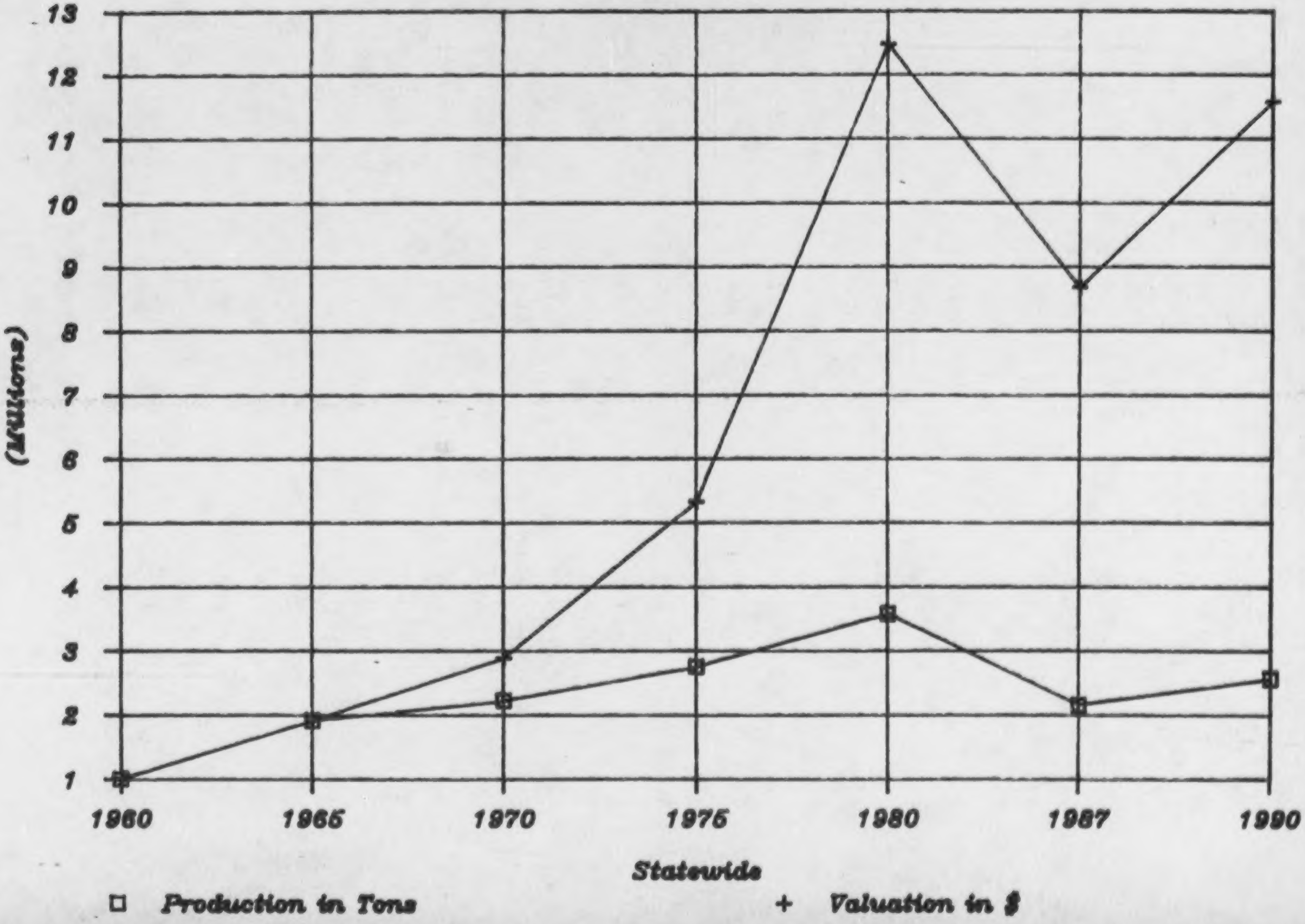
HISTORICAL BENTONITE PRODUCTION

Year	Net Tons
1921 - 1926	Lumped with "other clay"
1927	1,141
1928	11,097
1929	23,369
1930	25,900
1931	14,307
1932	11,906
1933	21,652
1934	27,177
1935	40,154
1936	36,926
1937	61,686
1938	65,289
1939	77,481
1940	70,265
1941	182,719
1942	201,424
1943	273,095
1944	347,048
1945	535,675
1946	324,886
1947	617,940
1948	713,802
1949	607,767
1950	543,274
1951	926,850
1952	926,850
1953	949,566
1954	928,837
1955	886,092
1956	1,215,943
1957	1,073,119
1958	648,404
1959	1,146,001
1960	1,096,850
1961	1,008,756
1962	1,165,538
1963	1,398,106
1964	1,578,528
1965	1,923,319
1966	2,081,352
1967	1,801,966
1968	2,118,871
1969	2,373,253
1970	2,228,978
1971	1,813,066
1972	2,062,384
1973	2,614,779
1974	3,422,675
1975	2,760,871
1976	3,278,765
1977	3,315,783
1978	3,626,652
1979	4,479,242
1980	3,584,713
1981	4,805,005
1982	2,345,914
1983	2,183,865
1984	3,083,324
1985	2,588,229
1986	1,818,502
1987	2,159,077
Cumulative Total	83,026,542

Source: Wyoming Department of Revenue and Taxation (net taxable tons)

Bentonite Production and Valuation

1960 – 1990



COAL

Coal results from the burial and compression of large amounts of vegetation. Increasing depth of burial results in the addition of heat which alters the original vegetation physically and chemically.

Wyoming's coal deposits accumulated during two geologic periods, the later Cretaceous and Early Tertiary, between 75 and 45 million years ago.

During late Cretaceous time, Wyoming was a low land area, periodically covered by a shallow sea which advanced and retreated from east to west. When the sea retreated, low lying coastal swamps developed where extensive vegetation grew, died and accumulated on the swamp bottoms. When the sea re-advanced, the plant material was buried by silts and clays. This cycle was repeated many times, with the earlier deposited material being buried deeper and deeper and ultimately being converted into coal by heat and pressure. Wyoming's Cretaceous coals are commonly thin, seldom exceeding 10 feet in thickness.

Conditions were different in early Tertiary Time, when the other sequence of Wyoming coals developed. The sea had disappeared, and various ranges of the Rocky Mountains had risen. A number of basins developed between these ranges, and large amounts of vegetation accumulated in these basins. These Tertiary coals are typically much thicker then the earlier deposits, with beds of 30 to 100 feet common, and a maximum known thickness of over 200 feet.

Coals are ranked according to composition and heating value. Peat, which consists of lightly compressed dried vegetation, is not considered a coal, although it is used as a fuel in Ireland and northern England. The ranks of coal are as follows:

Name	Amount of Carbon	BTU Content	Volatiles	Moisture
Anthracite	86 - 98%	16,000 - 20,000	5%	0%
Bituminous	55 - 85%	11,000 - 16,000	25%	20%
Subbituminous	30 - 55%	8,300 - 11,000	40%	30%
Lignite	10 - 30%	4,000 - 8,300	50%	40%

These ranks are divided into smaller categories in detailed classifications. Wyoming's coal is subbituminous in grade. It contains more moisture and less sulphur than many equivalent coals from the east and midwest.

The first written account of coal in Wyoming was made in 1843 by Captain John C. Fremont, "The Pathfinder". He referred to the appearance of coal in what was probably Cumberland Gap, near Kemmerer.

Captain John R. Stansbury, U. S. Army Corp of Engineers, reported seeing large outcrops of coal near Rock Springs and at Point of Rocks, twenty-five miles east of Rock Springs, in 1852.

The first use of Wyoming coal was made by the Army to heat winter quarters and in stage line forges in the mid-1800's.

The Union Pacific Railroad began prospecting for coal along its line in Wyoming in 1867, and the first coal mined by the railroad was 650 tons taken at the now abandoned Town of Carbon in 1868.

In 1908, forty years after the first production, coal mining was the leading industry in Wyoming, with a production of over six million tons, one-third of it from the Rock Springs area.

The Kemmerer Coal Company opened mines near Kemmerer about the turn of the century, and Kemmerer Coal is still operating at the present time, the longest continuous operation in the state.

Production increased up to 1947, when eight million tons were produced in the state, mostly from mines in the Hanna, Rock Springs, and Sheridan areas.

It was at this point that the railroads began the change from steam to diesel locomotives, and as demand for railroad coal decreased, Wyoming production followed it downward. The bottom was reached in 1959 when the state produced less than two million tons.

Beginning in the mid-1960's, interest in Wyoming coal, as a fuel for thermal electric generation plants, began to increase. This interest was sparked primarily by two factors, physical properties of the coal, and its cost. The physical property of Wyoming coal, which made it attractive to power plant operators, was its low sulphur content, which ranges between 0.5 and 1.5 percent sulphur. This constrasts with eastern coals which range from 5 to 9 percent sulphur. The ability to burn Wyoming coal without installation of expensive exhaust gas scrubbers more than compensated for other detrimental properties, namely low heat value and high water content.

Because virtually all Wyoming coal was strip mined, its cost of production was much less than deep mined eastern coal. In addition, large machinery and the latest technology greatly increased worker productivity, which lowered the price further.

At present, there are thirty active Wyoming coal mines; 28 surface and 2 underground operations. These mines are concentrated in only a few areas: the Hams Fork Coal Region in Lincoln County; the Rock Springs Coal Region in Sweetwater County; the Hanna Coal Field in Carbon County; the Powder River Coal Region in Converse, Campbell, and Sheridan Counties; and one mine in the Big Horn Coal Field of Hot Springs County.

The Powder River Basin accounts for 84% of Wyoming's production and boasts the three biggest surface coal mines in the nation: Amax's Belle Ayre and Jacob's Ranch Mines and Atlantic Richfield's Black Thunder Mine. Information on individual mines is available from the State Geological Survey in Laramie or the Wyoming Mine Inspector.

Wyoming coal production has increased over 15 fold since 1971 under the impetus of power plant demand. A new production record was set last year. The history of Wyoming coal production is given on the accompanying table.

HISTORICAL COAL PRODUCTION

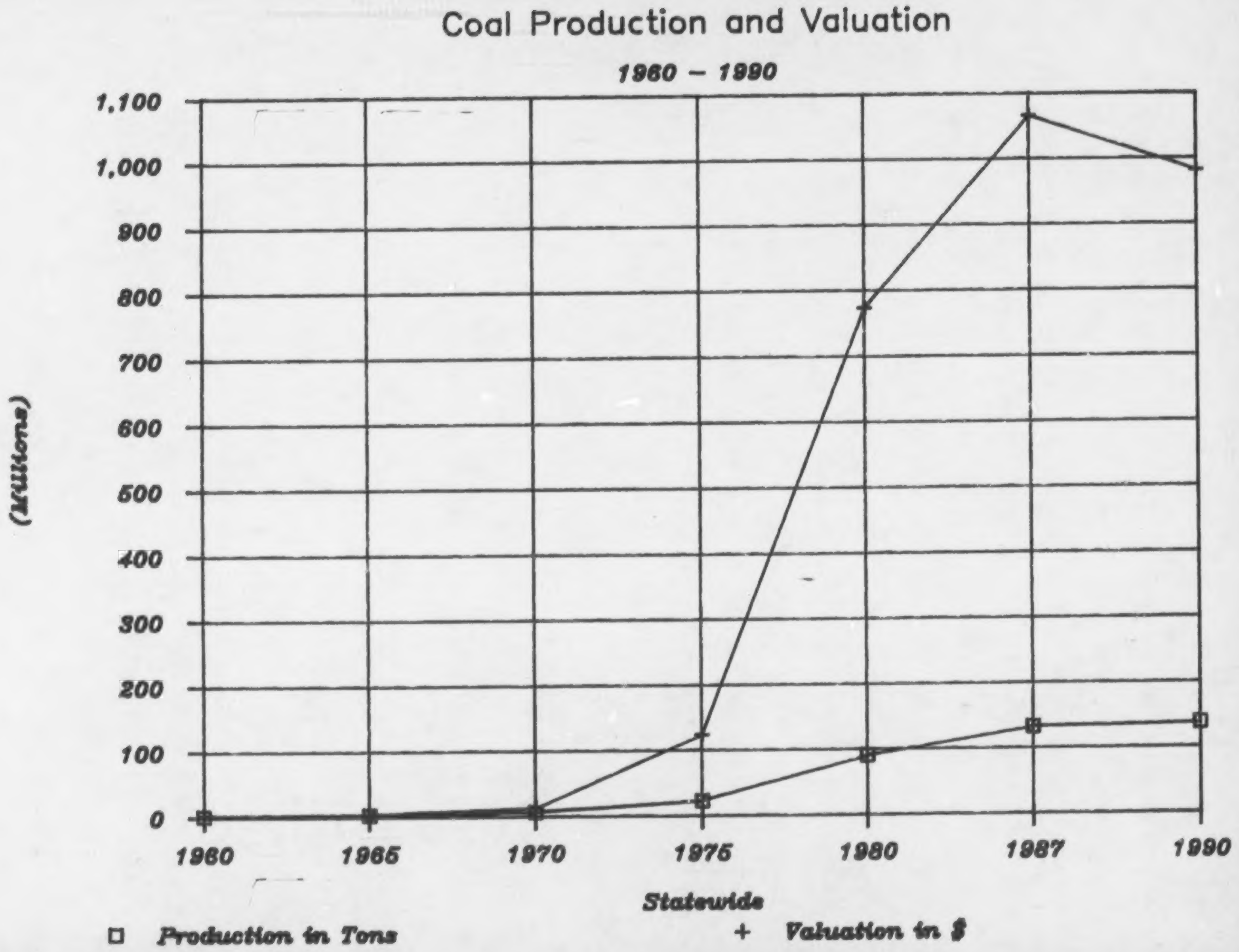
Year	Tons	Year	Tons
1865	800	1897	2,744,960
1866	2,500	1898	2,863,812
1867	5,000	1899	3,837,392
1868	6,925	1900	4,014,602
1869	58,186	1901	4,485,374
1870	105,295	1902	4,429,491
1871	147,328	1903	4,635,293
1872	221,745	1904	5,178,556
1873	259,700	1905	5,602,021
1874	219,061	1906	6,133,994
1875	300,808	1907	6,252,990
1876	334,550	1908	5,489,902
1877	342,853	1909	6,393,109
1878	233,200	1910	7,533,088
1879	400,991	1911	6,744,864
1880	527,811	1912	7,368,124
1881	628,181	1913	7,393,066
1882	707,764	1914	6,475,293
1883	779,689	1915	6,554,028
1884	902,620	1916	7,910,647
1885	807,328	1917	8,575,619
1886	835,999	1918	9,438,688
1887	1,170,318	1919	7,219,738
1888	1,512,936	1920	9,630,271
1889	1,388,947	1921	9,666,298
1890	1,870,366	1922	7,152,324
1891	2,327,841	1923	5,990,984
1892	2,503,839	1924	7,557,923
1893	2,439,311	1925	6,758,379
1894	2,417,463	1926	6,563,179
1895	2,246,911	1927	6,513,534
1896	2,229,624	1928	6,548,902

Historical Coal Production - cont'd.

Year	Tons	Year	Tons
1929	6,666,162	1957	2,918,508
1930	6,049,282	1958	1,627,063
1931	4,992,138	1959	1,977,404
1932	4,146,814	1960	2,006,788
1933	3,979,387	1961	2,487,803
1934	4,355,791	1962	2,575,531
1935	5,184,215	1963	3,099,521
1936	5,868,972	1964	3,117,921
1937	5,903,825	1965	3,260,815
1938	5,179,074	1966	3,670,704
1939	5,387,621	1967	3,587,742
1940	5,824,926	1968	3,683,281
1941	6,664,748	1969	4,398,572
1942	8,144,972	1970	7,039,980
1943	9,202,155	1971	7,743,347
1944	9,561,545	1972	10,043,161
1945	9,879,857	1973	14,272,350
1946	7,623,968	1974	19,957,726
1947	8,038,648	1975	23,141,105
1948	6,413,602	1976	30,298,432
1949	5,981,958	1977	44,577,218
1950	6,257,416	1978	56,456,133
1951	6,310,824	1979	68,792,573
1952	6,088,338	1980	90,527,538
1953	5,247,442	1981	98,410,522
1954	2,832,636	1982	104,014,096
1955	2,921,607	1983	107,902,764
1956	2,555,456	1984	125,931,455
		1985	135,105,204
		1986	128,145,751
		1987	132,753,011

Cumulative Total 1,642,379,733

Sources: Bureau of Mines (gross tons 1865 - 1921)
Wyoming Department of Revenue & Taxation (net tons 1921 - 1985)


Coal Production and Valuation
1960 – 1990
1,100
1,000
900
800
700
600
500
400
300
200
100
0
(Millions)
1960
1965
1970
1975
1980
1987
1990
Statewide
□ Production in Tons
+ Valuation in $

NATURAL GAS

Pure natural gas is composed of the simplest hydrocarbon, methane, CH_4. Natural gas, as it comes from the well, contains a number of different substances, including: ethane, propane, butane, and pentane (hydrocarbons), also carbon dioxide, helium, hydrogen, sulfide, and nitrogen.

Natural gas processing plants remove impurties in the gas and/or compress it to increase density in order to reach the heating standards of commercial gas. The materials removed from the gas by these plants are often valuable in themselves. Propane and butane are used as fuels, while ethane, pentane, and sulphur are utilized by the chemical industry. Hydrogen and helium are important industrial gases, while nitrogen, though often simply vented to the atmosphere, is being reinjected in secondary oil recovery in the Overthrust Belt. Carbon dioxide is also utilized in secondary oil recovery, as well as serving as an important refrigerant when in the liquid or solid form.

Natural gas occurs in three ways:

1. Free natural gas unassociated with crude oil.
2. Associated gas overlying and accompanying crude oil in the same reservoir.
3. Dissolved gas, which is gas in solution with the oil under reservoir conditions.

Pipeline quality natural gas has a heating value of about 1,000 calories per cubic foot. It burns with a bright flame, and the products of its combustion are carbon dioxide and water vapor. The high BTU output, plus the benign combustion products, make natural gas an excellent domestic fuel.

Wyoming has produced some natural gas since 1903, with early production coming from the Wind River and Big Horn Basins. Before 1918, Wyoming's natural gas production was included with Utah and Colorado, not allowing an individual state breakdown.

The Overthrust Belt leads Wyoming's geologic provinces in natural gas production followed by the Green River Basin, The Wind River Basin, and The Powder River Basin. As the Riley Ridge project has come on line overthrust production has continued to increase.

Wyoming currently ranks seventh in natural gas reserves in the United States. The three leading states, Texas, Louisiana, and Alaska, alone, account for about three-fourths of the total reserves.

Wyoming is sixth in natural gas production behind Texas, Louisiana, Oklahoma, New Mexico, and Kansas, in that order.

Industrial, commercial, and domestic heating and a fuel for industrial processes have always been, virtually, the only markets for Wyoming natural gas.

The precipitous drop in oil prices have contributed to some decline in natural gas production, since much gas is produced as a consequence of oil drilling. In 1987, gas production rose by 58 million MCF. A significant price drop resulted in a lesser valuation on this product than might be expected.

Since this country is self-sufficient in natural gas, the oil price drop has not had a similar effect on gas prices, although they have come down from earlier levels.

The accompanying table shows historical Wyoming natural gas production.

HISTORICAL NATURAL GAS PRODUCTION

Year	Gross MCF	Net Taxable MCF
1918*	4,338,840	
1919	6,014,000	
1920	10,312,000	
1921	15,608,000	5,729,963
1922	23,427,000	10,628,238
1923	35,523,000	25,370,247
1924	46,036,000	37,674,875
1925	45,539,000	35,432,436
1926	46,567,000	35,933,311
1927	43,581,000	36,205,467
1928	47,490,000	41,474,389
1929	44,648,000	38,253,618
1930	43,219,000	36,116,642
1931	39,770,000	34,943,043
1932	28,938,000	32,825,682
1933	25,830,000	27,716,094
1934	23,148,000	27,437,123
1935	26,643,000	29,856,668
1936	29,322,000	33,241,655
1937	31,023,000	33,418,463
1938	38,400,000	32,655,704
1939	44,700,000	28,828,909
1940	40,000,000	34,606,554
1941	43,409,000	37,242,868
1942	46,471,000	39,657,890
1943	52,000,000	40,233,211
1944	51,000,000	42,761,950
1945	52,000,000	44,571,599
1946	49,700,000	41,479,104
1947	57,740,000	47,748,881
1948	79,280,000	51,103,206
1949	87,450,000	53,948,462
1950	92,050,000	66,266,055
1951	95,600,000	73,136,179

Historical Natural Gas Production - cont'd.

Year	Gross MCF	Net Taxable MCF
1952	104,300,000	77,253,383
1953	104,900,000	77,982,000
1954	100,400,000	76,144,783
1955	100,000,000	81,457,597
1956	102,000,000	91,072,880
1957	159,000,000	113,937,978
1958	158,000,000	120,449,451
1959	194,000,000	151,611,826
1960	213,800,000	169,747,464
1961	226,800,000	185,585,937
1962	230,800,000	195,104,386
1963	240,500,000	193,637,934
1964	259,900,000	221,588,565
1965	258,900,000	218,565,497
1966	266,966,000	216,263,811
1967	257,965,000	209,582,267
1968	283,916,000	220,631,045
1969	342,998,000	243,825,419
1970	317,970,129	260,037,715
1971	310,113,187	282,320,781
1972	308,668,300	285,426,141
1973	321,134,758	287,818,223
1974	291,521,549	265,600,635
1975	273,076,164	248,528,881
1976	330,220,509	260,752,431
1977	298,535,962	272,300,637
1978	372,526,289	273,724,975
1979	390,493,988	333,322,180
1980	450,533,045**	349,634,385

Historical Natural Gas Production - cont'd.

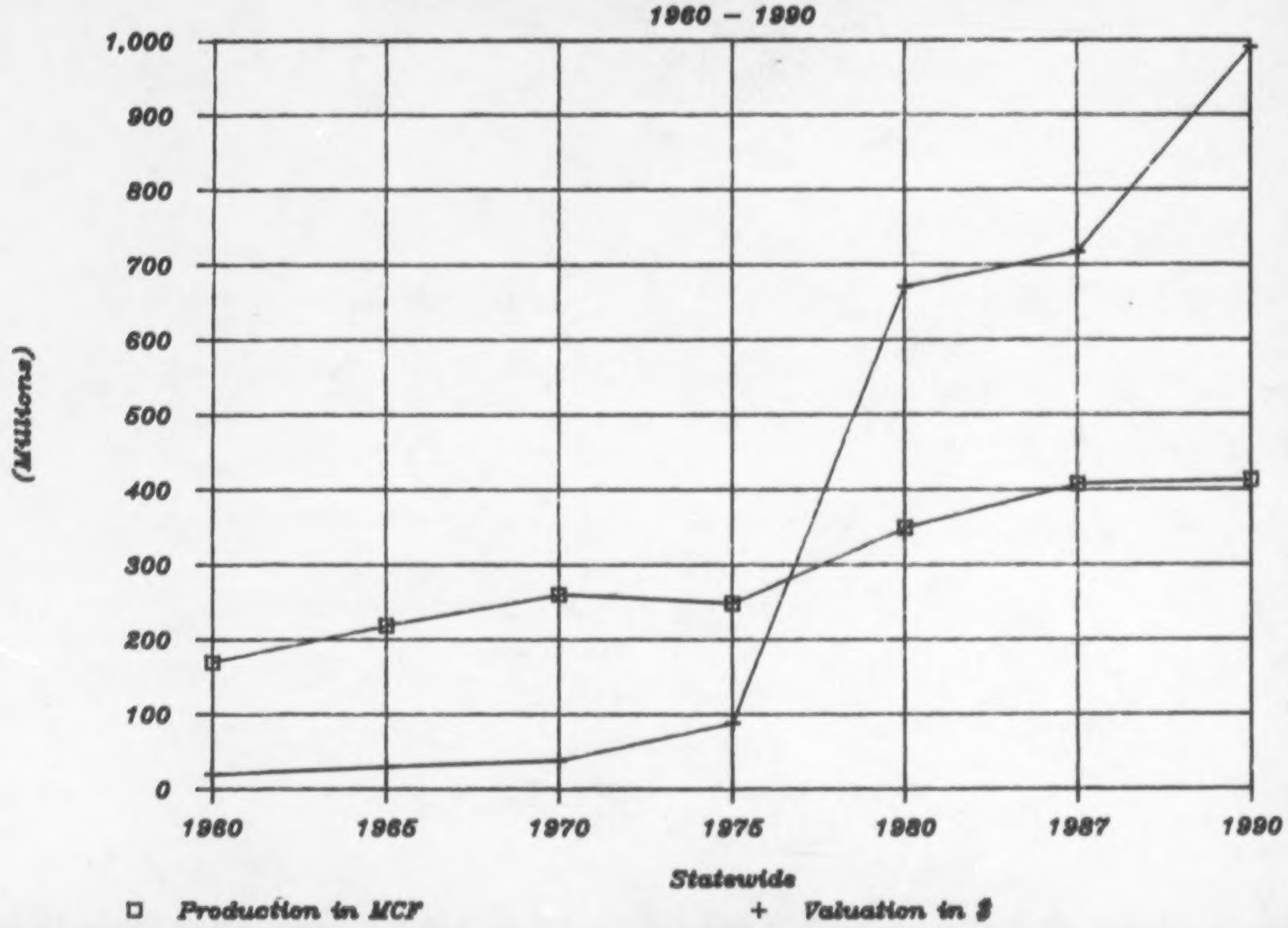
Year	Gross MCF	Net Taxable MCF
1981	437,014,500**	353,076,052
1982	459,321,013**	351,192,737
1983	539,774,090**	395,656,547
1984	600,137,792**	447,515,295
1985	597,896,090**	412,026,614
1986	596,978,338**	352,799,892
1987	733,210,238**	407,862,822
Cumulative Total	12,542,606,944	9,835,775,167

Sources: Bureau of Mines (1918 - 1969)
Wyoming Department of Revenue and Taxation (1970-1985)

**Wyoming Oil and Gas Commission

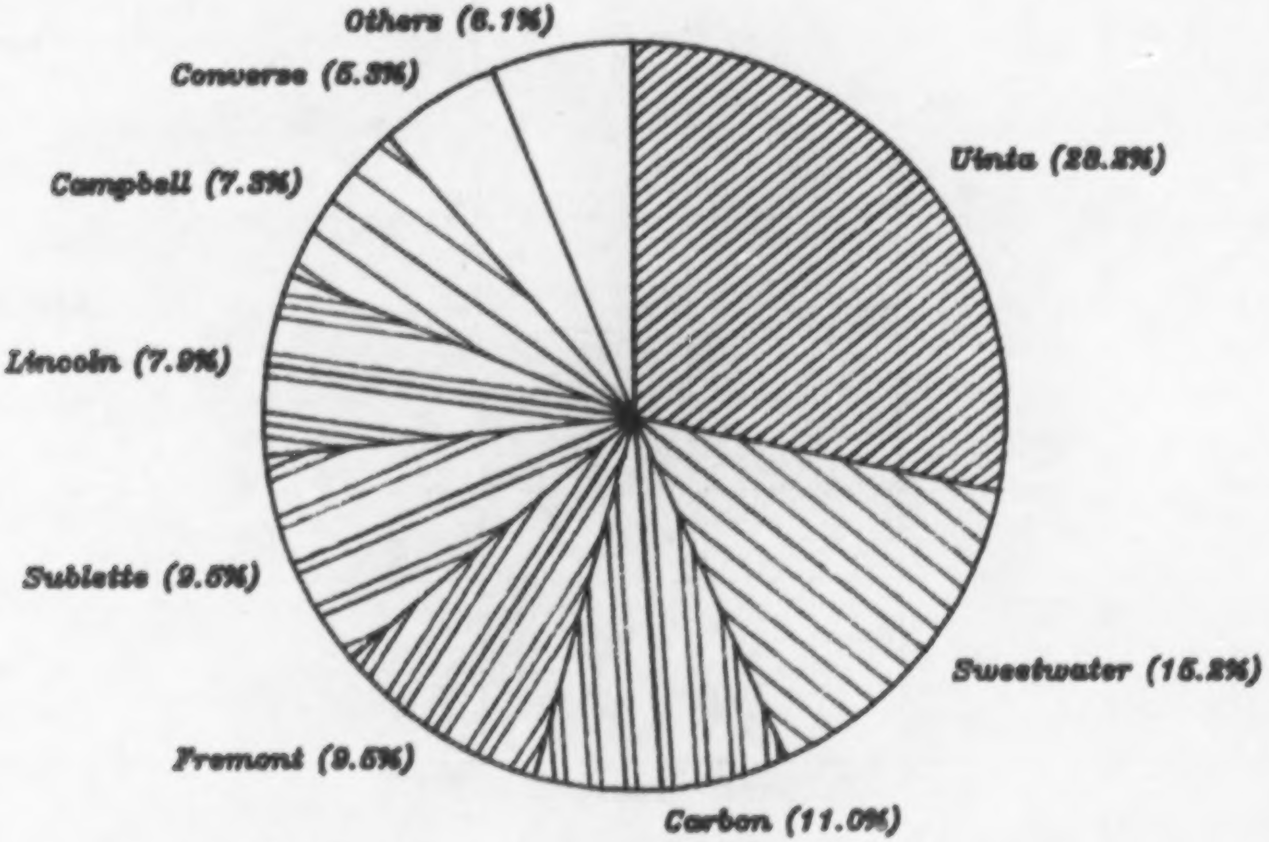
*Wyoming has had gas production since 1903, but it was included in other states.

Natural Gas Production and Valuation



1987 Natural Gas Production by County

Total Production = 407,862,822 MCF



PETROLEUM

The first recorded reference to the occurrence of oil in Wyoming dates back to 1833, when Captain Bonneville visited the "Great Tar Spring" on the Popo Agie River near present day Lander.

The first commercial marketing of oil occurred in 1851 from an oil seep on Poison Spider Creek, west of present day Casper. Records indicate that Jim Bridger, Kit Carson, and others mixed the oil with flour and sold the product to settlers as axle grease.

The first oil field was discovered by Mike Murphy in 1884, when he drilled a 300 foot well near the "Great Tar Spring". This field, Dallas Dome, is still producing oil, 100 years after its discovery.

Pennsylvania Oil and Gas Company built the first small refinery in Wyoming at Casper in 1895. During the period 1900-1920, drilling revealed several of the state's largest fields, including Oregon Basin and Elk Basin in Park County, Garland in Big Horn County, and Lost Soldier in Sweetwater County.

The lack of nearby markets and the high cost of transporting oil by rail, resulted in low demand for Wyoming oil, and crude prices dropped to as low as 10¢ per barrel in the 1930's. It was not until World War II that development moved into full swing. This expansion continued into the 1970's.

Oil is derived from the alteration of organic matter by heat and pressure. Petroleum originates in sedimentary rock environments, but may migrate to other locations, so that there are oil reservoirs known from volcanic and metamorphic rock sequences as well. Most oil is found in sedimentary rocks, in occurrences which may be divided into structural or stratigraphic traps. A structural trap is one where the oil is maintained in place by mechanical means, such as, folding, faulting, or some combination of the two. Stratigraphic traps involve a change in rock type, from permeable to impermeable, with the oil held in the permeable portion. A stratigraphic unit which changes from a sandstone (permeable) to a shale (impermeable) is an example of a stratigraphic trap. Most of the early discoveries in Wyoming were in large structural traps with obvious surface expression. Modern exploration is focused on deep, subtle structures using sophisticated seismic techniques to discover new reserves. The delineation of stratigraphic traps is based on careful analysis of trends and rock types along with the application of interpretation and imagination by petroleum geologists.

Reservoir rocks in Wyoming range from Tertiary to Precambrian in age. In general, fields in stable interior basin areas are characterized by stratigraphic traps and produce from younger (Cretaceous and Tertiary) formations. Fields in more highly deformed basin margins are usually characterized by structural traps, and production is from older rocks.

The largest oil producing regions in Wyoming, in order, are: the Powder River Basin, Green River Basin, Big Horn Basin, Overthrust Belt, and Wind River Basin.

Early oil production in Wyoming peaked in 1923, after discovery and development of large fields, such as: Salt Creek, Elk Basin, Oregon Basin, and Hamilton Dome. A long period of decline followed these early discoveries until the second World War led to a resurgence which continued to 1970, when the maximum annual production of 155,743,349 barrels was recorded. Since 1970 production has been steadily declining, due to depletion of the old large fields, like Salt Creek. At present, over 50 percent of Wyoming's production comes from ten large fields which average over 50 years in age. Newer discoveries in the state are concentrated primarily in Campbell County (Hilight, Raven Creek, Hartzog Draw fields) and the Overthrust Belt.

Wyoming ranks sixth in crude oil production, behind Texas, Alaska, Louisiana, California, and Oklahoma. However, it dominates Rocky Mountain production, with 44% of the production from the area, and 64% of the reserves.

The dominant use of petroleum is as a fuel for internal combustion engines or industrial and residential heating. However, petroleum derivatives are used to manufacture many kinds of lubricating and hydraulic fluids, fibers, medicines, plastics, and a number of other products, ranging from paints to synthetic rubber.

Although production has been slowly declining, valuation of oil production in Wyoming increased dramatically since the initiation of OPEC price increases in the early 1970's, and since decontrol of domestic oil prices in 1980. In 1981, oil production accounted for 44% of the total state valuation, some 3.6 billion dollars. Oil valuation has declined since 1981 and this decline has been precipitous in the last 21 months, but petroleum will remain the state's most valuable mineral product.

Currently, six refineries are operating in Wyoming with a total capacity of 175,000 barrels per day. These refineries can process less than half of Wyoming's daily crude oil production, the remainder being transported by pipeline to neighboring states.

The most recent estimate of discovered oil reserves in Wyoming, made by the American Petroleum Institute, reports a total state reserve of 800 million barrels. This figure has been declining steadily since 1971, and although new discoveries in the Overthrust Belt will slow the decline, the downward trend will continue.

The jump in production seen in 1984 is due to liquids stripped in the Overthrust gas processing plants being included in oil production.

Given new exploration techniques, along with enhanced recovery methods which are coming into increasing use, Wyoming will continue to lead the Rocky Mountain region in oil production for some time. If oil shale utilization ever reaches large scale fruition, Wyoming will be a significant oil producer well into the next century.

Oil prices firmed somewhat in 1987, although the duration of the upswing was unknown. Production totals in 1987 were up somewhat as a result, although future trends are hard to predict.

Rebound will stabilize, but the question is, what remnant of the oil industry will survive, and in what condition will U.S. energy security be when conditions finally improve.

HISTORICAL PETROLEUM PRODUCTION

Year	Gross Bbls.	Net Taxable Bbls.
1894	2,369	
1895	3,455	
1896	2,878	
1897	3,650	
1898	5,475	
1899	5,560	
1900	5,450	
1901	5,400	
1902	6,253	
1903	8,960	
1904	11,542	
1905	8,454	
1906	7,000	
1907	9,339	
1908	17,775	
1909	22,137	
1910	115,430	
1911	186,695	
1912	1,572,306	
1913	2,406,522	
1914	3,560,375	
1915	4,245,525	
1916	6,234,137	
1917	8,978,680	
1918	12,596,287	
1919	13,172,000	
1920	16,831,000	
1921	19,333,000	16,066,125
1922	26,715,000	16,926,406
1923	44,785,000	21,769,826
1924	39,498,000	35,714,747

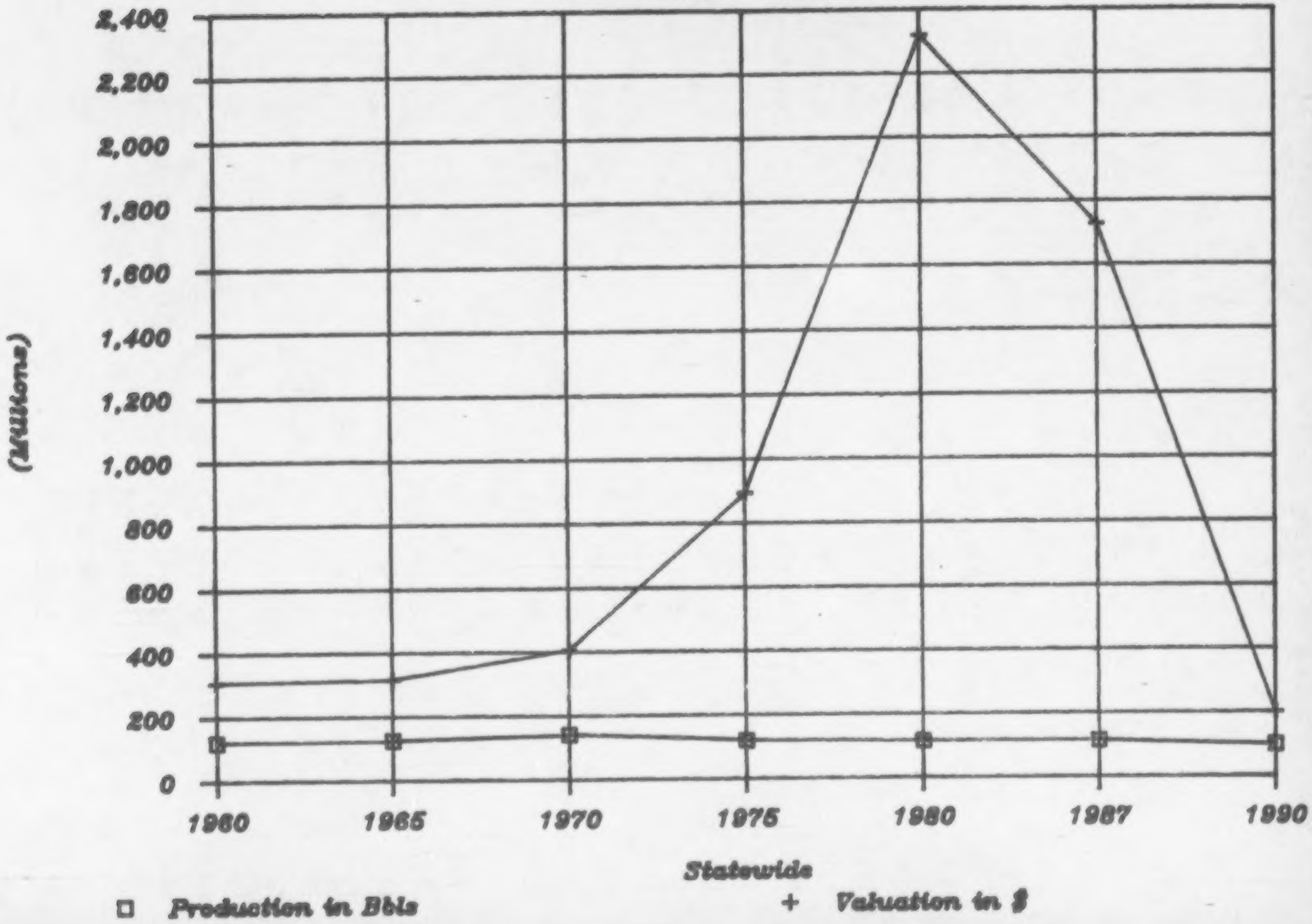
Historical Petroleum Production - cont'd.

Year	Gross Bbls.	Net Taxable Bbls.
1925	29,173,000	32,495,306
1926	25,776,000	24,753,727
1927	21,307,000	21,681,708
1928	21,461,000	18,508,699
1929	19,314,000	16,895,390
1930	17,868,000	15,639,170
1931	14,834,000	13,008,011
1932	13,418,000	11,353,006
1933	11,227,000	10,124,504
1934	12,556,000	11,108,115
1935	13,755,000	12,247,316
1936	14,582,000	13,062,296
1937	19,166,000	17,704,873
1938	19,022,000	17,781,813
1939	21,454,000	20,465,457
1940	25,711,000	24,242,112
1941	29,878,000	28,378,725
1942	32,812,000	30,259,013
1943	34,253,000	31,454,751
1944	33,356,000	30,554,213
1945	36,219,000	33,253,522
1946	38,977,000	35,847,249
1947	44,722,000	40,662,626
1948	55,032,000	49,978,630
1949	47,890,000	44,150,095
1950	61,631,000	56,411,712
1951	68,929,000	63,444,374
1952	68,074,000	62,723,252
1953	82,618,000	76,839,278
1954	93,533,000	85,005,784
1955	99,483,000	91,006,385
1956	104,830,000	96,278,109

Historical Petroleum Production - cont'd.

Year	Gross Bbls.	Net Taxable Bbls.
1957	106,616,000	100,373,021
1958	109,584,000	103,483,116
1959	125,968,000	113,643,205
1960	133,910,000	121,097,650
1961	141,937,000	128,657,407
1962	135,847,000	123,381,779
1963	144,407,000	123,852,669
1964	138,752,000	125,376,557
1965	138,314,000	125,136,181
1966	134,470,000	121,638,887
1967	136,310,000	122,816,724
1968	144,250,000	129,985,723
1969	154,945,000	140,522,875
1970	155,743,349	141,546,503
1971	146,261,295	132,588,059
1972	137,564,566	125,222,375
1973	139,054,568	126,943,274
1974	138,735,974	127,555,252
1975	132,237,026	120,629,951
1976	134,148,510	120,571,157
1977	135,994,695	124,328,857
1978	137,384,886	122,799,348
1979	126,669,861	115,678,022
1980	126,361,962*	114,284,682
1981	118,844,000*	111,912,600
1982	117,898,667*	108,055,462
1983	120,979,721*	110,420,981
1984	127,763,146*	117,289,568
1985	130,984,917*	123,172,534
1986	122,409,887*	111,148,577
1987	115,922,003*	112,981,314
Cumulative Total	5,543,535,787	4,974,585,635

Sources: Bureau of Mines (1894-1969)
Wyoming Department of Revenue and Taxation (1970-1987)
*Wyoming Oil and Gas Commission

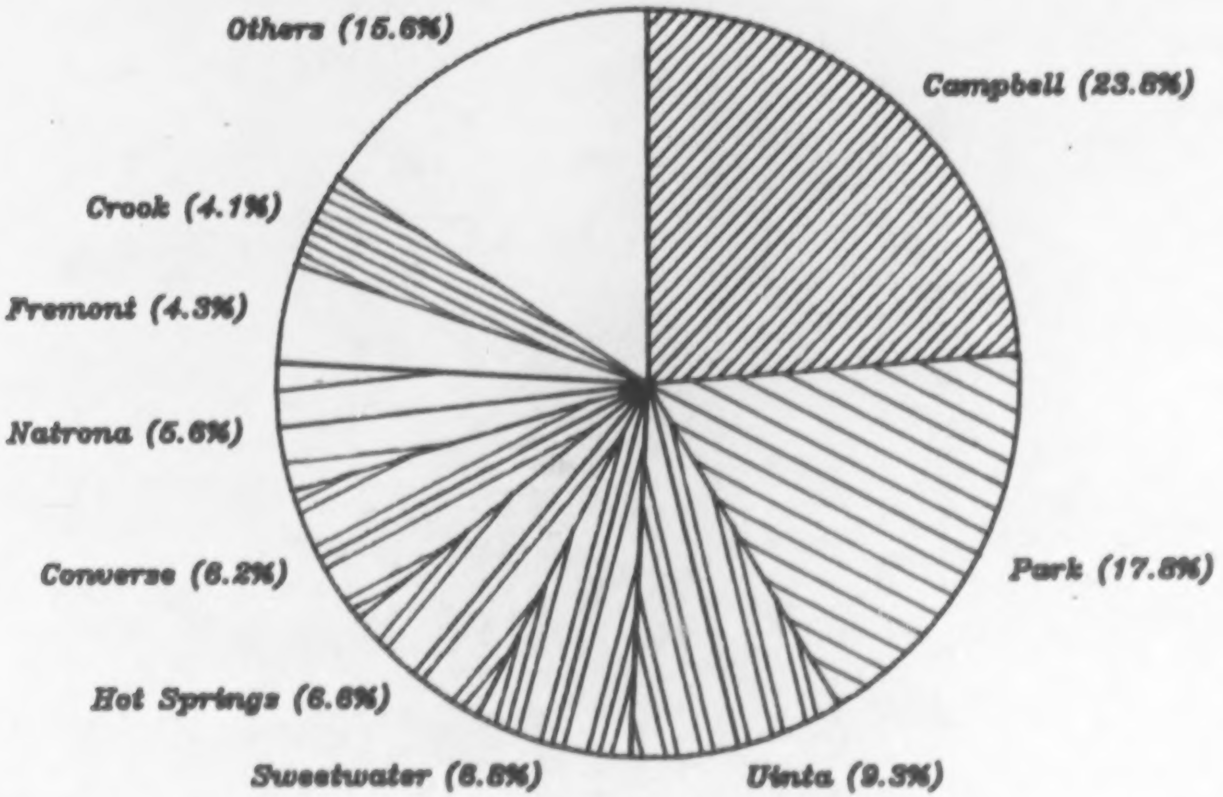


Oil Production and Valuation

1960 – 1990

1987 Crude Oil Production by County

Total Production - 112,981,314 Barrels



TRONA

The world's largest deposit of trona is found in Wyoming's Green River Basin. From the deposit, the state produces about 95 percent of the nation's supply of natural soda ash. Several deposits of natural soda ash are known in the western United States, but only Wyoming and California have active mines. Deposits have also been identified in several other countries, but the only one currently producing is Kenya.

Trona is a water-bearing sodium bicarbonate compound with many uses. Trona originated as a precipitate from a large fresh-water lake, Lake Gosiute, which covered as much as 15,000 square miles of surface in southwestern Wyoming. The trona was precipitated when Lake Gosiute underwent a period of restricted circulation and became highly saline at the same time as elevated temperatures resulted in increased evaporation.

More than 40 individual beds of trona underlie an area of about 1,300 square miles. It is estimated that some 50 billion tons of mineable trona, plus an additional 30 to 40 billion tons of marginal trona, are contained in these beds.

In 1938, Mountain Fuel Supply Company drilled an oil and gas test well northwest of Green River, Wyoming, and discovered a brine rich in trona. Exploration by the Union Pacific Railroad, in 1940-1942, indicated the presence of extensive reserves of trona. In 1946, Westvaco, the predecessor of FMC Corporation, sank a 1500 foot shaft to the main trona deposit and constructed a pilot refinery at the surface. The first soda ash was produced by FMC in 1950, with Stauffer Chemical coming on line in 1962, Allied Chemical in 1968, Texasgulf in 1975, and Tenneco Oil Company in 1982.

All Wyoming trona mining is done underground. Room and pillar methods and coal mining equipment, modified to withstand the harder ore, are used.

Both conventional and continuous mining techniques have been traditionally used, but recently long wall mining has been successfully employed.

In the past, soda ash was primarily produced synthetically by the Solvay process. This process combines salt (sodium chloride) and calcium carbonate (limestone) to make sodium carbonate (soda ash). The last plant using the Solvay method in this country was shut down last year. The Solvay plant shutdowns were the result of high capital, labor, and energy requirements, but the greatest factor was the environmental considerations. For each ton of soda ash produced by the Solvay process, about 1.7 tons of waste are generated, which poses an enormous disposal problem.

Trona is refined by first subjecting the ore to a heat of 400°F to remove water of crystallization, combustible materials, and carbon dioxide. This crude soda residue is then taken into water solution and filtered to remove insoluable residues. The filtered material is then dried. The final product is pure soda ash.

Trona's primary use is in glassmaking, which takes around 55% of the United States' consumption. The chemical industry accounts for 23% of consumption, followed by soap and detergent at 5%, pulp and paper manufacturing at 4%, water treatment at 3%, and 10% in various applications including pharmaceuticals, photography, metallurgy, and petroleum refining.

Wyoming trona production has grown from 29,658 tons in 1950, to 12,422,255 tons in 1987. Valuation of 1987 production was $114,546,971. The short-term future of Wyoming trona appears good, based primarily on the industries aggressive marketing and discovery of new applications such as stock gas scrubbing.In the longer term, significant growth in Wyoming's trona market would seem to be likely to come from Europe, where most soda ash is currently produced by the Solvay process, with the same problems there as in this country.

China has expressed interest as well, but she has abundant raw materials for Solvay extraction, and is currently building a large plant to utilize them using this process.

Whatever the demand, Wyoming possesses the resources to meet it. If trona had been mined at the current rates since the year 1 A.D., only 20% of the known reserves would have been depleted, and if mining had proceeded at the same rate since the rise of the first dynasty in Egypt, 50% of the known reserves would still remain untouched.

An annual compilation of trona production in Wyoming is given in the following table.

HISTORICAL TRONA PRODUCTION

Year	Net Tons
1950	29,658
1951	76,769
1952	56,733
1953	262,001
1954	465,851
1955	529,311
1956	541,456
1957	633,917
1958	564,474
1959	747,164
1960	862,879
1961	809,762
1962	1,082,119
1963	1,200,525
1964	1,480,746
1965	1,782,745
1966	2,147,390
1967	2,323,475
1968	2,793,325
1969	3,708,657
1970	4,022,304
1971	4,203,677
1972	4,783,946
1973	6,029,984
1974	7,070,617
1975	7,379,792
1976	8,800,607
1977	10,215,602

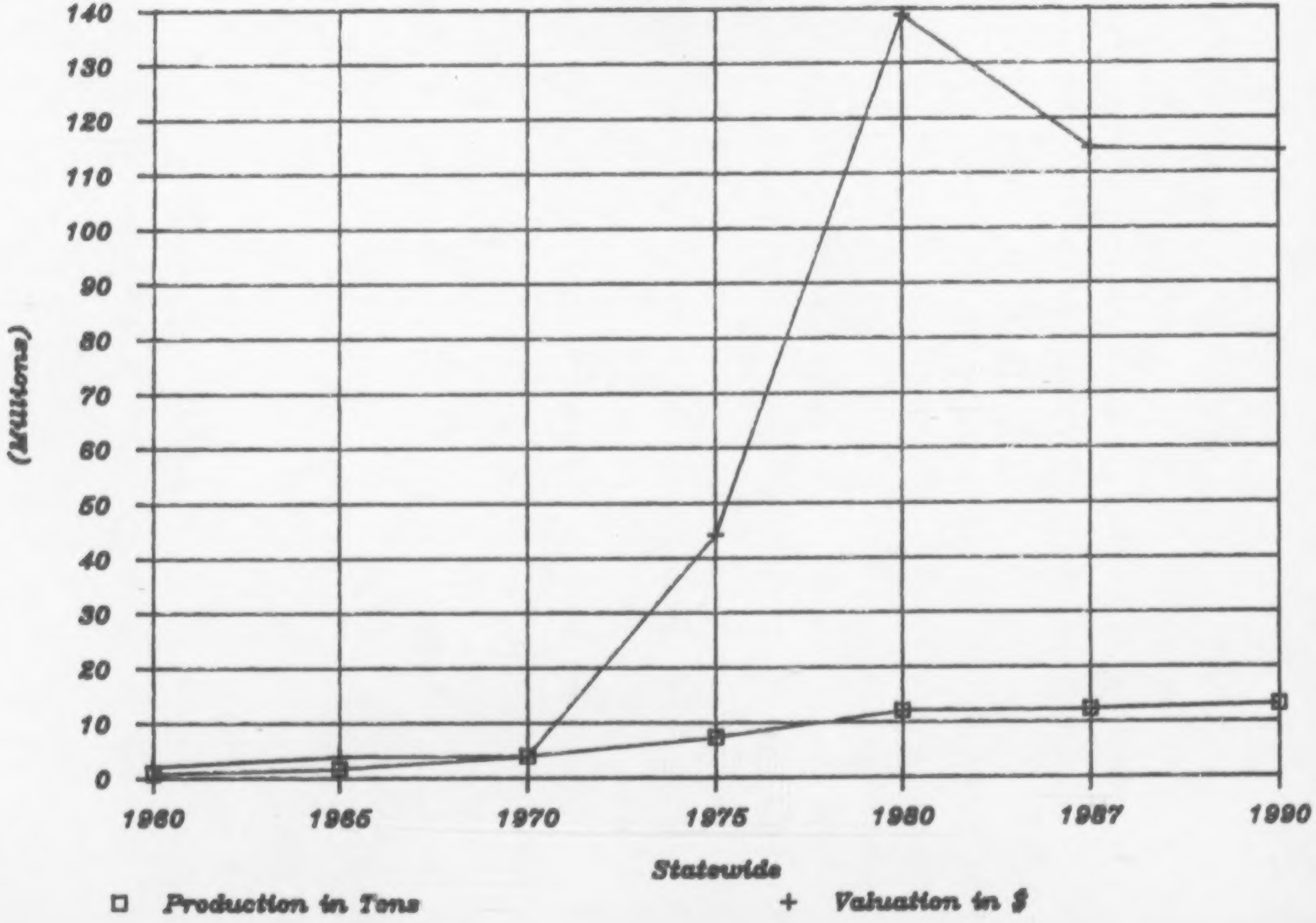
Historical Trona Production - cont'd.

Year	Net Tons
1978	9,974,237
1979	11,771,985
1980	12,159,241
1981	11,787,731
1982	10,073,690
1983	10,542,417
1984	10,971,209
1985	10,776,304
1986	11,919,530
1987	12,422,255
Cumulative Total	187,003,822

Source: Wyoming Department of Revenue and Taxation

Trona Production and Valuation

1960 – 1990



URANIUM

Uranium was discovered as an element in 1789 and isolated as a metal in 1842. A few minor uses for uranium salts and medical demand for radium created a small market in the 1920's and 1930's. So little was known about possible ore sources in the United States that the uranium ore used in the production of the two atomic bombs dropped on Japan came from the Belgian Congo. The Atomic Energy Commission was appointed by President Truman in 1946. In the late 1940's and early 1950's the public was encouraged to prospect for uranium and the first great uranium rush was on.

Uranium is a widespread, though uncommon, primary constituent of crystalline rocks of the earth's crust. As a result of weathering processes, it is often removed from these source rocks and redeposited in sediments. Uranium deposits are known from rocks as old as Precambrian, and as recent as Pleistocene, and all ages in-between.

The most important deposits of uranium in Wyoming occur in permeable sandstones of Tertiary age. The uranium was originally contained in the crystalline rocks which form the cores of the state's mountain ranges. The uranium was leached from these rocks and precipitated in the much younger sandstones.

Uranium ore is recovered by open pit, underground, and solution mining methods. Open pit and underground mining is carried out in the usual manner, the only difference being that the material to be removed is determined by using a scintillation counter to delineate the radioactive ore.

In solution mining, a shaft is drilled into the ore body. Chemicals are introduced down this shaft which dissolve the uranium out of the rock. The uranium-containing solution is removed through another well or wells drilled to the depth of the ore body. The solution on the surface is processed much as the solutions obtained by conventional milling methods to remove the dissolved uranium. Due to the toxic nature of the solutions used, great care must be exercised in solution mining operations to prevent ground water contamination.

Milling involves grinding and crushing the ore, after which it is treated with acid to take the uranium into solution. The leachate is treated with various chemicals to concentrate the uranium and simplify it chemically. The final concentrate is evaporated to yield "yellow cake". The yellow cake consists almost entirely of uranium 238 and a small percentage of uranium 235, the fissionable isotope. The uranium must be enriched to around 3.5% U 235 for power reactor use, while weapons grade material has a U 235 content of over 90%. The yellow cake is shipped to various conversion and enrichment facilities to be upgraded to the required level.

The primary uses of uranium are as fuel for nuclear reactors and national defense. The drop in power demand coupled with uneasiness over plant reliability have combined to slow the construction of nuclear power plants, and greatly reduce the requirements for uranium. Defense requirements are difficult to determine, but new weapon construction plus upgrading of existing stock piles (nuclear warheads deteriorate through time) has increased, though not enough to increase demand significantly. Other uses for uranium are in X-ray tubes, ultraviolet lamps, glass colorants, ceramics, and steel.

Wyoming's first production of uranium occurred in 1953, when 5,156 tons of ore were mined. The largest production of 5,517,070 tons was attained in 1978. Wyoming ranks second to New Mexico in both uranium production and amount of reserves. The history of Wyoming uranium production is given in the accompanying table.

As of January 1988, Wyoming had one active uranium surface mining operation and two in-situ projects. All of the production from these operations was ticketed for foreign customers. Given the availability of cheap high grade ore from abroad coupled with the difficulties of the domestic nuclear power industry, it seems unlikely that the uranium mining and milling industry will ever again play a significant role in Wyoming's mineral economy. The reserves are here, but market and competition factors make the future appear bleak, to say the least.

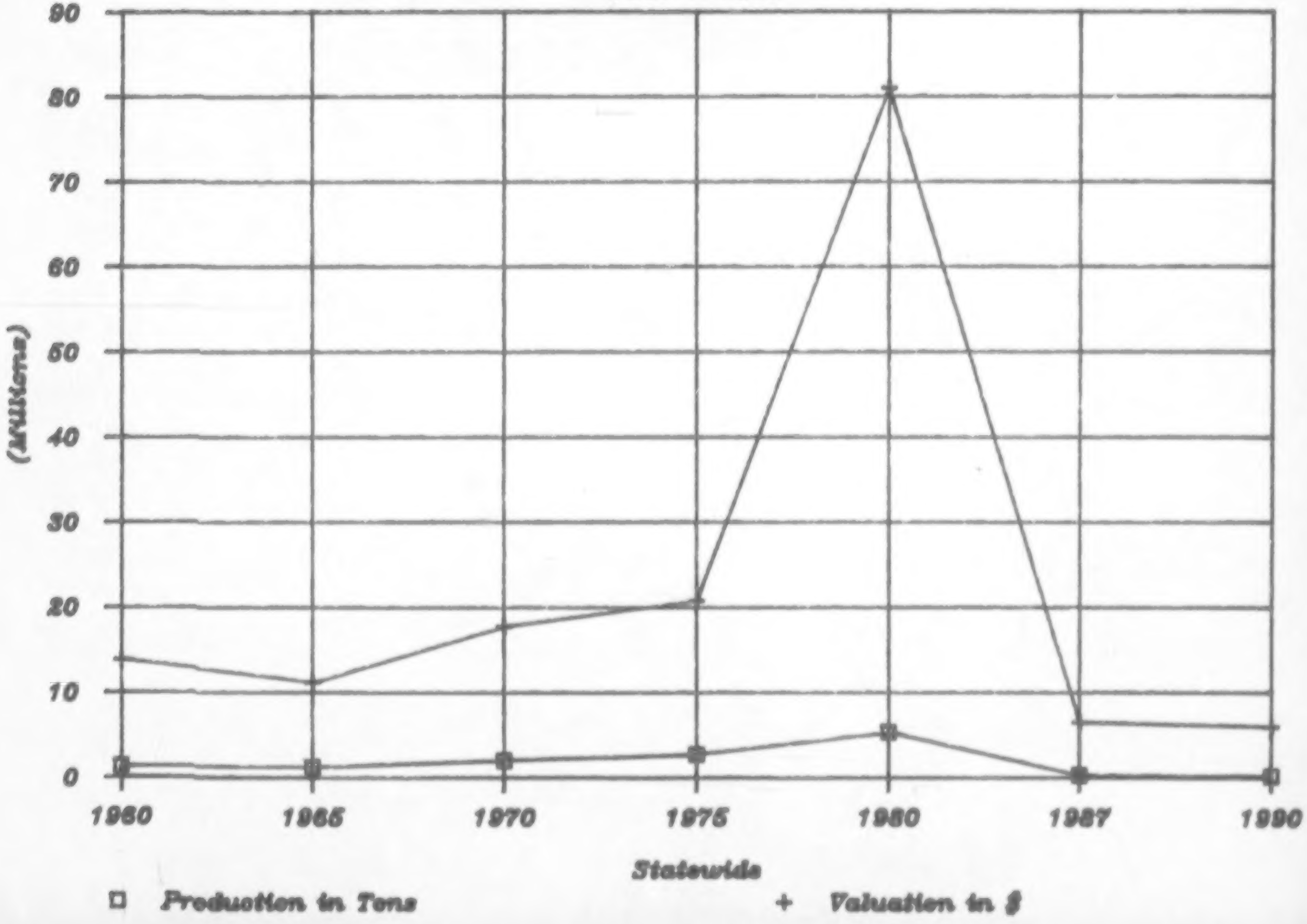
HISTORICAL URANIUM PRODUCTION

Year	Net Tons
1953	5,156
1954	10,443
1955	45,782
1956	116,463
1957	264,133
1958	559,053
1959	810,514
1960	1,307,919
1961	1,542,192
1962	1,394,704
1963	1,289,595
1964	1,126,827
1965	1,222,821
1966	916,415
1967	1,242,187
1968	1,977,258
1969	1,631,518
1970	2,042,074
1971	2,044,943
1972	2,390,100
1973	2,588,011
1974	2,287,697
1975	2,736,663
1976	3,302,422
1977	3,986,025
1978	5,517,070
1979	5,512,345
1980	5,352,337
1981	4,560,683
1982	3,895,510
1983	3,022,650
1984	1,634,262
1985	619,967
1986	226,821
1987	244,087
Cumulative Total	67,427,281

Source: Wyoming Department of Revenue and Taxation

Uranium Production and Valuation

1960 – 1990



CONSTRUCTION MATERIALS

The major construction materials mined in Wyoming are crushed rock for cement, sand and gravel, and limestone. The cement industry is the largest non-fuel minerals industry in the nation. Cement is vital to the construction and road-building industries and is literally the backbone of modern civilization. Wyoming does have one cement plant in Albany County.

Sand and gravel is the only mineral commodity which is produced in all 50 states, and coincidentally is the only one produced in all of Wyoming's 23 counties. Its primary uses are as aggregate for concrete and bituminous mixes, for road bases and coverings and as fill. Pure sand is used in glass manufacture, foundry molding, and metallurgical applications.

Limestone is utilized as a building and decorative stone, road metal, aggregate, and in sugar beet factories where pure limestone is used as a source of lime and carbon dioxide in the refining process.

The Geological Survey of Wyoming has a construction materials map of the state.

MISCELLANEOUS MINERALS

COPPER

Copper was the first metal utilized by man over 6,000 years ago. Native uncombined copper was utilized for tools, weapons, and jewelry due to the ease with which it could be shaped.

Currently, over half of the copper produced is used in the electrical industry for wire, equipment, and components. Next to silver, copper has the highest electrical conductivity of any metal. Other uses of copper are in plumbing, instruments, household utensils, decorative items, and coinage.

Copper occurs as the native metal or combined in sulphides, oxides, and carbonates. These secondary compounds are the result of weathering and concentration of copper from its original source in low silica igneous rocks.

Copper mineralization occurs sporadically throughout every mountain range in Wyoming. Copper mineralization is most common in Precambrian rocks, but is found in younger rocks in places such as the northern Laramie mountains and the Hartville uplift.

In the interval between 1899 and 1908, over 23.5 million pounds of copper were produced in Wyoming, mostly from the Encampment district, west of Laramie, and in this period Wyoming was one of the leading copper producing states in the nation. Copper production increased during World War I, mostly from the Hartville area, north of Wheatland. Since that time, Wyoming copper production has been insignificant. Recent speculation concerning reopening of the famous Ferris-Haggerty Mine in Carbon County, along with AMAX Minerals' interest in opening a copper mine in the Kirwin district in the Absaroka Mountains in Park

County, are very unlikely to come to pass as long as world supplies remain large.

DIAMONDS

Diamond is composed of carbon, arranged in a crystal structure which makes it the hardest natural substance known. Diamonds were first prized as gemstones centuries ago in India and Borneo. It was not until much later that the applications of diamond as an abrasive in grinding wheels and drill bits, and as wire drawing dies, were realized.

Diamonds are produced in South Africa, the U.S.S.R., Brazil, and the East Indies. No natural diamonds are produced in the United States, although the General Electric Company has produced synthetic diamonds of industrial grade since 1955.

The primary source of diamonds is the mineral Kimberlite, a greenish gray crystalline rock which is the solidified lava conduit of an ancient volcano. Diamonds are produced naturally in the high pressures and temperatures found in pockets of molten rock deep beneath the surface. Exposure of these Kimberlite pipes results in weathering of diamonds from the rock and their concentration in stream gravels. About 50% of the diamonds recovered are taken by placer mining of old stream channels.

Kimberlite pipes occur along the eastern Wyoming-Colorado border. A number of small (less than 2 mm) diamonds have been extracted from these rocks. Cominco American conducted preliminary evaluation work on the deposits in Wyoming but these efforts have been abandoned.

GOLD

Gold has been treasured since ancient times due to its beauty, permanence, and the ease with which it can be worked. In the latter half of the 20th century, it has become a valuable industrial material, with applications in computers, shielding, high performance welding and other uses. Gold's most widespread use remains as a monetary standard. Nearly half of the gold that has ever been mined is in government vaults.

Gold is one of the "noble" metals. It does not combine chemically with other elements. Gold is found in a wide variety of geologic environments associated with various rocks and minerals. Due to its weight and lack of impurities, it is concentrated by stream action into placer deposits where it is recovered by dredging and washing sediments.

Gold has been found in all of the mountain ranges of Wyoming. Past significant mining operations were located in the Wind River Mountains, the Medicine Bow Mountains, and the Sierra Madre Mountains. No mines in these districts were exploited below 400 feet, and many were abandoned while still in the ore body.

Approximately 325,000 ounces of gold have been produced from Wyoming. No operations are currently active, although current gold prices have stimulated renewed interest and exploration.

GYPSUM

Gypsum has been used since ancient times for carving and decoration. The Greeks used it to manufacture plaster, which remains the principle use for the mineral. In the late 1800's a method to retard the setting of gypsum plaster was developed, and this revolutionized the industry by permitting the use of plaster in construction. The development of prefabricated wallboard revolutionized the industry again in the 1960's. Approximately two-thirds of the gypsum currently marketed is in the form of prefabricated products.

Gypsum is precipitated primarily from sea water, but may be deposited in saline lakes or hot springs. It often occurs as a product of volcanic activity and may occur in metallic mineral veins.

Gypsum, in Wyoming, primarily occurs in layers in Permian, Triassic, and Jurassic red beds at various localities within the state. Some gypsum has been mined in Wyoming since the 1890's, but current production comes from mines in Albany, Big Horn, and Park Counties. Virtually all of Wyoming's gypsum output is utilized in the manufacture of wallboard for the construction industry and the manufacturing of cement.

JADE

Jade has been a prized gemstone in China and the Far East for a long time. It is valued for its toughness, ability to take a high polish, and the ease with which it is carved.

The term jade is applied to two different minerals which have roughly similar properties. The mineral jadeite is a sodium-aluminum silicate. It is hard and tough, and varies from white to greenish-white to emerald green. It has been found in Burma, Southern China, Tibet, Mexico, and South America. No jadeite has been found in Wyoming. The second variety of jade is the mineral nephrite, a calcium-magnesium-aluminum silicate. It is not quite so hard or tough as jadeite. Its color varies from olive-green through dark green to black. Light "apple-green" jade is the most valued. It has been found in China, Turkestan, Siberia, New Zealand, and Alaska, as well as Wyoming.

Jadeite occurs in metamorphic rocks in veins and masses. Nephrite occurs as veins in metamorphic rocks. Wyoming jade occurs as veins in Precambrian metamorphic rocks in the southern Wind River Mountains. Boulders and pebbles of jade occur around the southern end of the Wind River Mountains and on the north end of the Laramie Mountains to the east. Although the jade industry of Wyoming is small, it is well known throughout the world and provides some income and/or a hobby for many people.

ZEOLITES

Zeolites are sodium and/or calcium-aluminum silicate minerals that occur in bedded clay deposits or in vesicles in volcanic rocks. Their current use is in water softening due to their ability to exchange ions with solutions they contact. It is projected that they will be used on a large scale for extraction of radioactive products from nuclear reactor wastes.

The Beaver Rim area of Fremont County contains layered zeolites bedded with clays exposed over a considerable area; however, there is no commercial production at this time.

Tenneco Minerals abandoned their proposed Zeolite operation in Sweetwater County.

Wyoming Energy Consumption

Wyoming is a net exporter of all energy forms it produces. The state exports much larger quantities of liquid fuels, natural gas, coal, and electricity than it consumes. In years past, the mineral yearbook has addressed only production. The value of energy minerals to Wyoming's economy has been established. This section is offered to reflect Wyoming's small energy consumption, relative to its contribution to the Nation's energy pool.

Department of Energy tabulations consistently rank Wyoming as the highest per capita energy consuming state in the nation. Three factors contribute to that high per capita consumption.

1. Wyoming is a large state with great distances between communities. As a consequence, travel in the state requires larger amounts of gasoline.

2. Wyoming winter temperatures can drop below zero and remain there for days at a time. Low temperatures coupled with winter winds make the Wyoming climate a rigorous one. Such a climate requires high consumption of fuels.

3. Most important, Department of Energy use statistics reflect the energy produced in a state. Wyoming produces large amounts of coal, petroleum, natural gas, and electricity which are energy intensive industries. As a consequence, Wyoming residents appear as energy gluttons when in fact much of the consumption attributed to them is exported and utilized elsewhere.

The remainder of this section is devoted to an analysis of energy produced and consumed in Wyoming, and provides comparisons of energy production to energy consumption by county based upon accessible data.

Gasoline and Diesel

Wyoming's refineries have an annual capacity of 2.6 billion gallons of crude oil per year. Estimated capacity during 1987 was 80 percent, resulting in a through put of 2.1 billion barrels. Approximately 50% of a refinery's output is gasoline, resulting in an approximate 1987 gasoline production in Wyoming of 1,005,000,000 gallons of gasoline. Wyoming consumption is 30% of that amount.

The following figures reflect gasoline sales, and as such include amounts purchased by vehicle users passing through the state as well as residents. There is no way to break out resident versus transient consumption, but non-resident gasoline use is quite significant.

Diesel consumption is not compiled on a county by county basis. Consequently, we know 131,515,913 gallons of diesel fuel were purchased in Wyoming in 1987, but no regional breakdown is possible.

An analysis of users of diesel fuel in Wyoming fall into several categories:

1. Agriculture.
2. The trucking industry.
   a. A significant transient component is involved here.
3. Railroads.
   a. Again, a transient component is significant.
4. Public transportation.

Diesel powered private automobiles are not a significant factor.

Gasoline 1987

County	Gallons
Albany	17,553,386
Big Horn	5,247,247
Campbell	19,474,824
Carbon	17,243,470
Converse	6,423,333
Crook	5,513,786
Fremont	18,913,156
Goshen	8,065,859
Hot Springs	3,222,777
Johnson	5,882,748
Laramie	41,699,038
Lincoln	9,758,288
Natrona	36,501,657
Niobrara	2,136,451
Park	15,044,453
Platte	6,387,337
Sheridan	14,139,610
Sublette	4,211,329
Sweetwater	29,556,609
Teton	13,022,914
Uinta	15,582,585
Washakie	5,808,734
Weston	4,128,214
TOTAL	305,465,642

Natural Gas

Natural gas is the predominant home heating fuel in Wyoming. Its utilization in the state is widespread, pipelines provide delivery. In terms of estimating county consumption the point of delivery was the determining factor. Consumption figures generally reflect population with the exception of Washakie County which appears low and Big Horn County which appears high, neighboring counties in the Big Horn Basin.

Consumption varies with population, reflecting use in space heating. The only two counties where natural gas is not generally available, Sublette and Teton counties, consumed 698,930 and 674,802 gallons of propane respectively as a primary heating fuel.

For comparative purposes, natural gas contains 1,000,000 BTU's per MCF per gallon.

Wyoming produced 407,863,822 taxable MCF of natural gas in 1987. Wyoming's consumption of 26,380,871 MCF is 6.5% of its production.

Natural gas consumption by county in 1987 was as follows:

Natural Gas

County	# MCF
Albany	1,749,889
Big Horn	1,456,493
Campbell	1,650,658
Carbon	983,433
Converse	552,633
Crook	50,640
Fremont	1,433,196
Goshen	448,690
Hot Springs	319,211
Johnson	329,632
Laramie	4,645,049
Lincoln	378,965
Natrona	4,635,596
Niobrara	140,146
Park	2,142,205
Platte	368,969
Sheridan	1,016,739
Sublette	5,172
Sweetwater	3,268,652
Teton	0
Uinta	685,171
Washakie	18,461
Weston	101,271
1987 TOTAL	26,380,871

Coal

Wyoming mines produced 146.8 million gross tons of coal in 1987. The amount consumed within the state totaled 22.1 million tons, or 15.1% of the total. Electrical generation within the state accounted for 20.2 million tons, 91% of the total. The remainder, 1.9 million tons, or 9%, was utilized in trona refining, coke manufacture, sugar refining, and institutional and domestic space heating.

Campbell County is the leading coal producing county in Wyoming and the nation with 122.3 million tons in 1987. Sweetwater County is second in the state with 11.8 million tons, followed by Converse at 5.1, Lincoln at 3.8, Carbon at 2.5, Sheridan at 1.2, and Hot Springs with 27,000.

Coal consumption in the state follows the distribution of power plants with Sweetwater leading at 8.4 million tons, followed by Platte at 6.3, Lincoln at 2.2, Converse at 2.8, Campbell at 2.2, and Weston at .2.

Electricity

The capacity of electrical generating facilities is measured in kilowatts. Electrical production is measured in hours of delivery kilowatt hours or megawatt hours.

Based on annual reports to the Wyoming Public Service Commission's Utility Division, generating facilities in Wyoming delivered 34.62 billion kilowatt hours of electricity in 1987. This figure includes line losses and internal consumption. The Jim Bridger plant of Pacific Power and Light in Sweetwater County led state generating plants with 14.4 billion kilowatt hours produced, followed by the Laramie River Station of Tri-State Generation in Platte County with 11.4 billion KWH, Utah Power & Lights' Eva Naughton Plant in Lincoln Countty at 4.0 KWH, P.P. & L.'s Dave Johnston station in Converse County with 3.9 billion KWH, and Black Hills Power and Light Company's 3 stations in Campbell and Weston counties with 891 million KWH.

Reports of power purchases made to the Wyoming Public Service Commission indicate that utilities in Wyoming used 8.92 billion kilowatt hours of electricity in 1987. Rural Electrification Administration (R.E.A'S) entities accounted for most of this amount -- 3.7 billion kilowatt hours of this total, with the remainder distributed between some companies such as Montana Dakota Utilities and Cheyenne Light Fuel & Power, the Wyoming Municipal Power Authority, whose membership consists of 8 municipally owned electrical utilities, and a few smaller users such as F.E. Warren Air Force Base plus a small amount from the Western Area Power Administration. Consumption is distributed as follows:

Entity	Bil KWH
R.E.A.'s	4.41
P.P. & L.	3.32
WMPA (Cody, Ft. Laramie, Guernsey, Lingle, Lusk, Pine Bluffs, Powell & Wheatland)	.215
Cheyenne L.F. & P.	.64
Mountana-Dakota Utilities	.18
City of Gillette	.15
F.E. Warren A.F.B., W.A.P.A.	.00003
TOTAL	8.92

The electrical power used within Wyoming in 1987 was approximately 25.8% of the amount generated in the state.

COUNTY MINERAL PRODUCTION AND VALUATION

1988

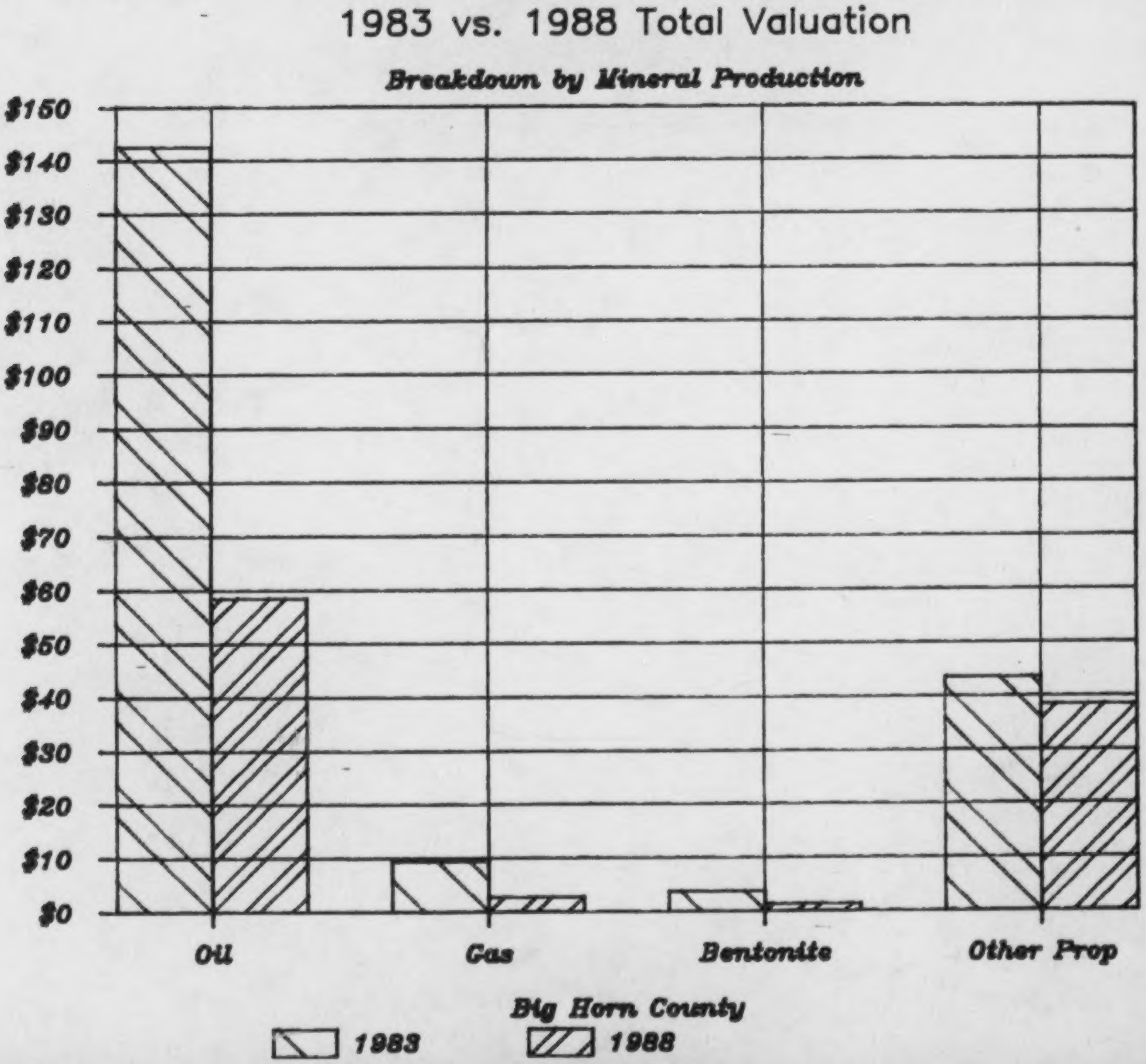
ALBANY COUNTY

Over 80% of Albany County's mineral valuation in 1988 was on crude oil, with gypsum, cement rock, and construction materials making up the remainder.

Oil production was down slightly in 1987, but valuation per barrel rose $1.93. These various factors combined to raise total 1988 mineral valuation in the county 200 thousand dollars over 1987.

BIG HORN COUNTY

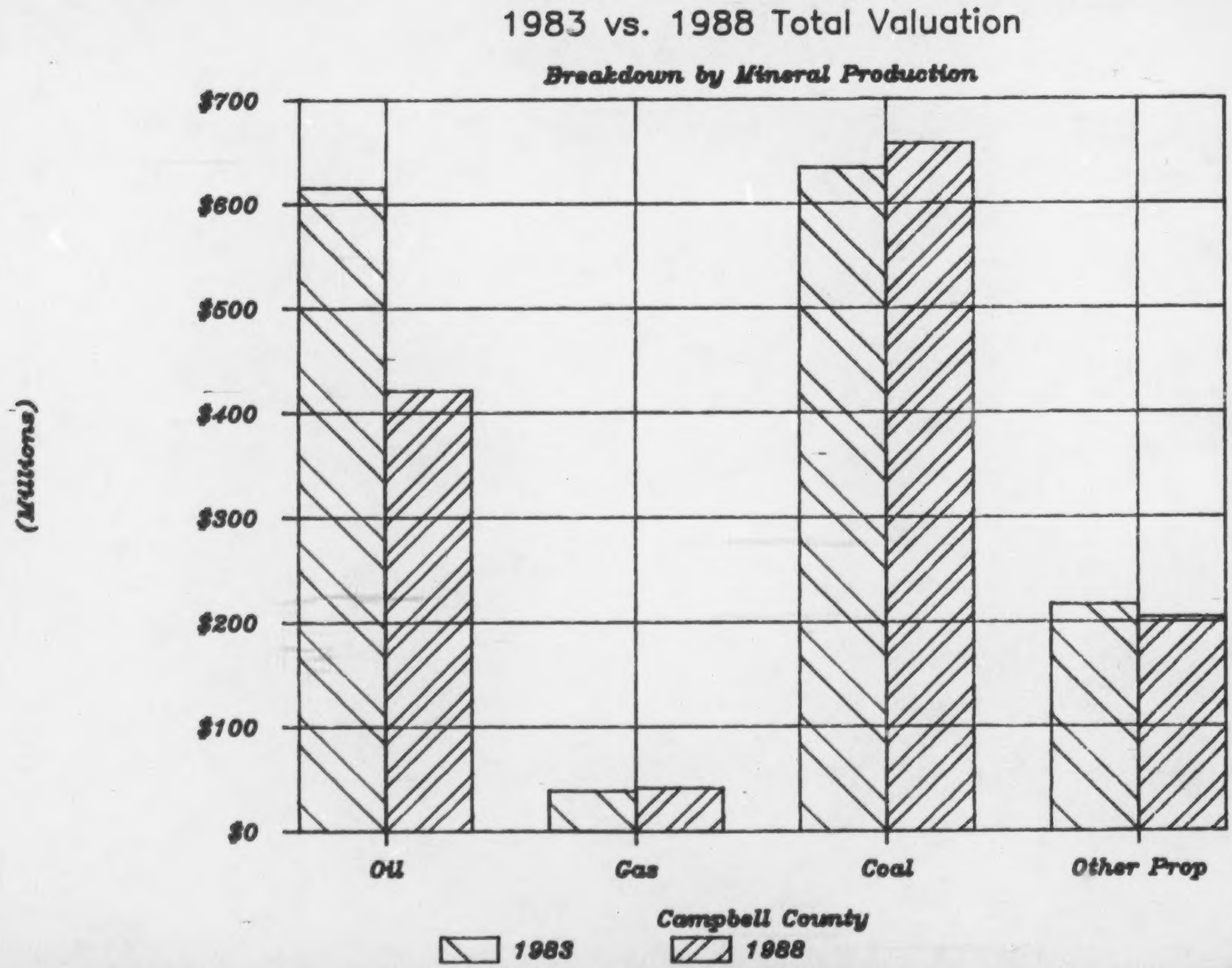
Big Horn County's dominant mineral product is crude oil, accounting for 92% of the county's mineral valuation in 1988. Production increased by 200,000 barrels, and a $2.70 per barrel increase in unit value resulted in a valuation jump of 13 million dolloar. Natural gas production increased in 1987, while bentonite decreased by 65,000 tons. Gypsum production fell by 674,000 tons. Modest amounts of clay, sand and gravel were again produced.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
(Millions)
Oil
Gas
Bentonite
Other Prop
Big Horn County
▧ 1983
▨ 1988

CAMPBELL COUNTY

Campbell County leads Wyoming in oil and coal production, and is 7th in natural gas production.

Oil production rose by 2.3 million barrels in 1987, and valuation increased by 1.82 per barrel. Although cola production rose to a new high of 110 million tons, in 1987, 83% of Wyoming's total, valuation rose by only 15 million dollars due to a drop in the unit price of 51 cents per ton. Gas production rose by over 3 million MCF.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
($Millions)
$700
$600
$500
$400
$300
$200
$100
$0
Oil
Gas
Coal
Other Prop
Campbell County
1983
1988

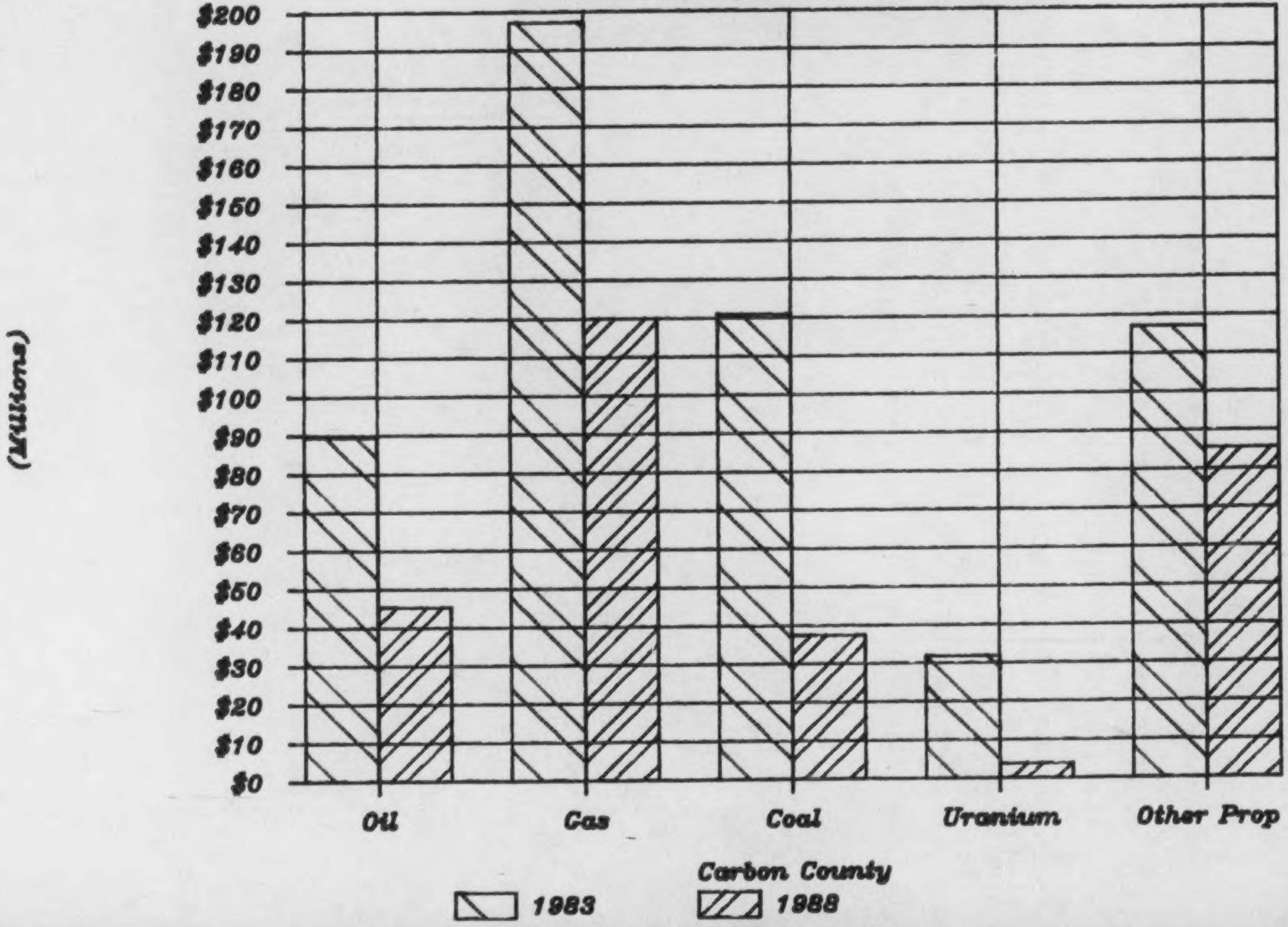
CARBON COUNTY

Natural gas was the most valuable county mineral commodity in 1987, with a total worth of 120 million dollars.

Carbon county produced 2.1 million tons of coal in 1987, up slightly from 1986. High mining costs in Carbon County will keep production at these modest levels.

Carbon County produced 94,000 tons of uranium ore in 1987.

Oil production was up from 2.4 to 2.9 million barrels.



1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

CONVERSE COUNTY

Oil production fell in Converse County in 1987, from 7.7 to 6.9 million barrels. A valuation increase of $1.88 per barrel, however, resulted in a valuation rise of 2 million dollars.

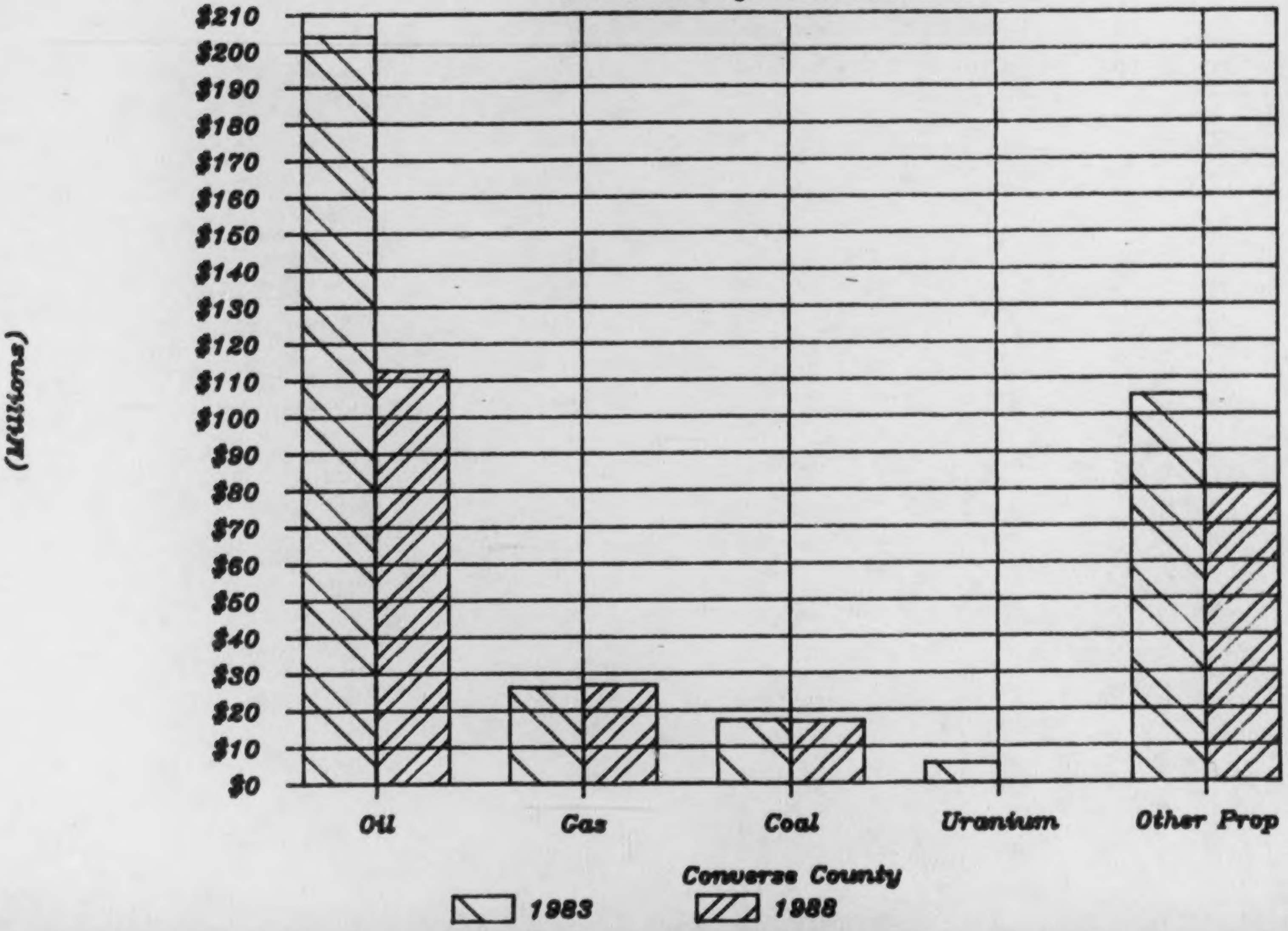
Natural gas production fell by 9.0 million MCF over 1986, while valuation rose by .19 per MCF.

Coal production in the county held steady in 1987.

Some in-situ Uranium mining continues in the County, and more is planned.

1983 vs. 1988 Total Valuation

Breakdown by Mineral Production



CROOK COUNTY

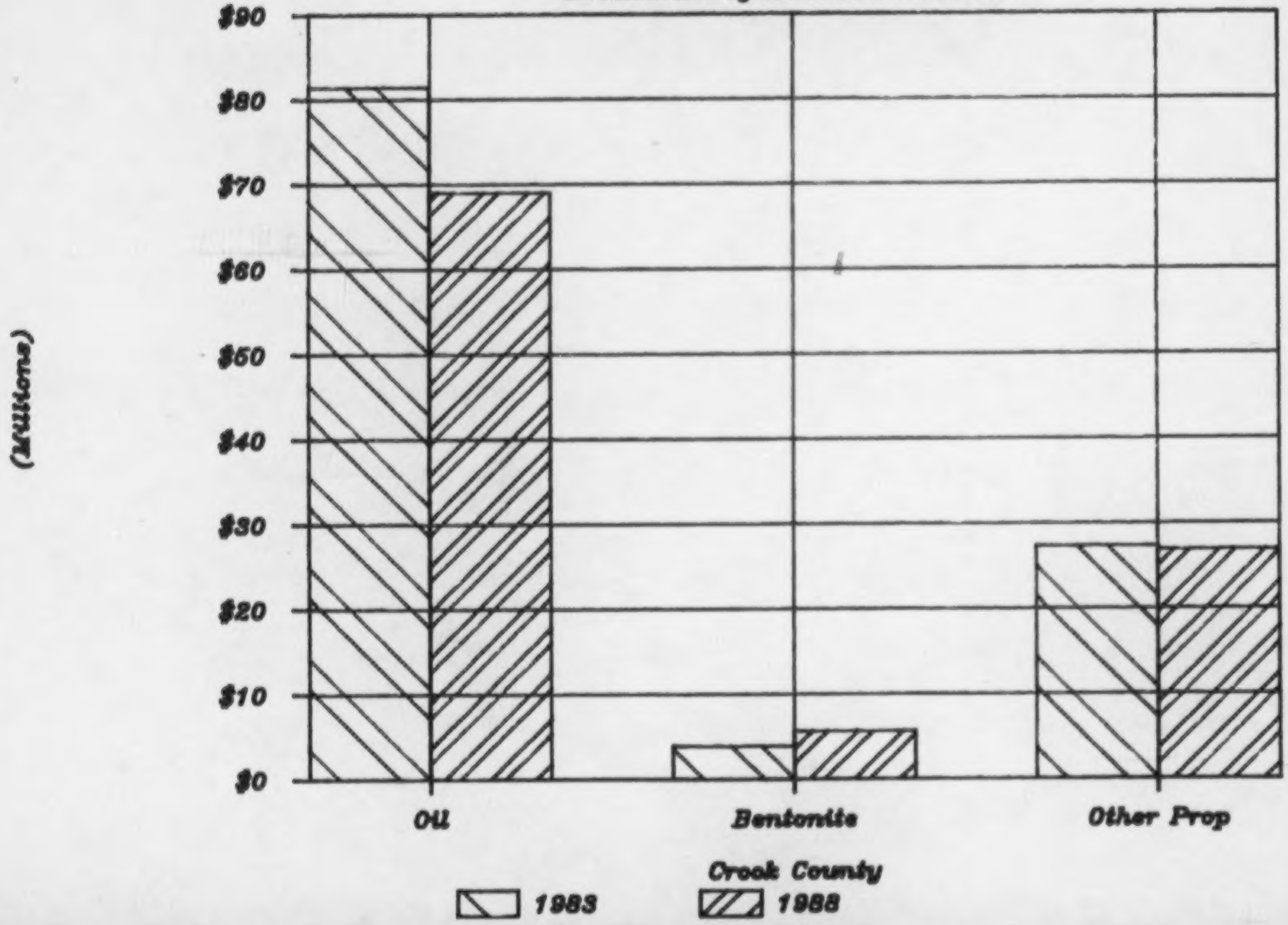
Oil production in Crook County rose by almost 100,000 barrels in 1987. Unit valuation rose by $2.75 per barrel, resulting in an oil valuation increase of over 14 million dollars. Oil accounts for 92% of the county's mineral valuation.

Natural gas production held almost steady in 1987 but the county's production is so small that minor fluctuations result in large changes in output.

Bentonite production rose slightly in 1987, in line with a statewide increase.

1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

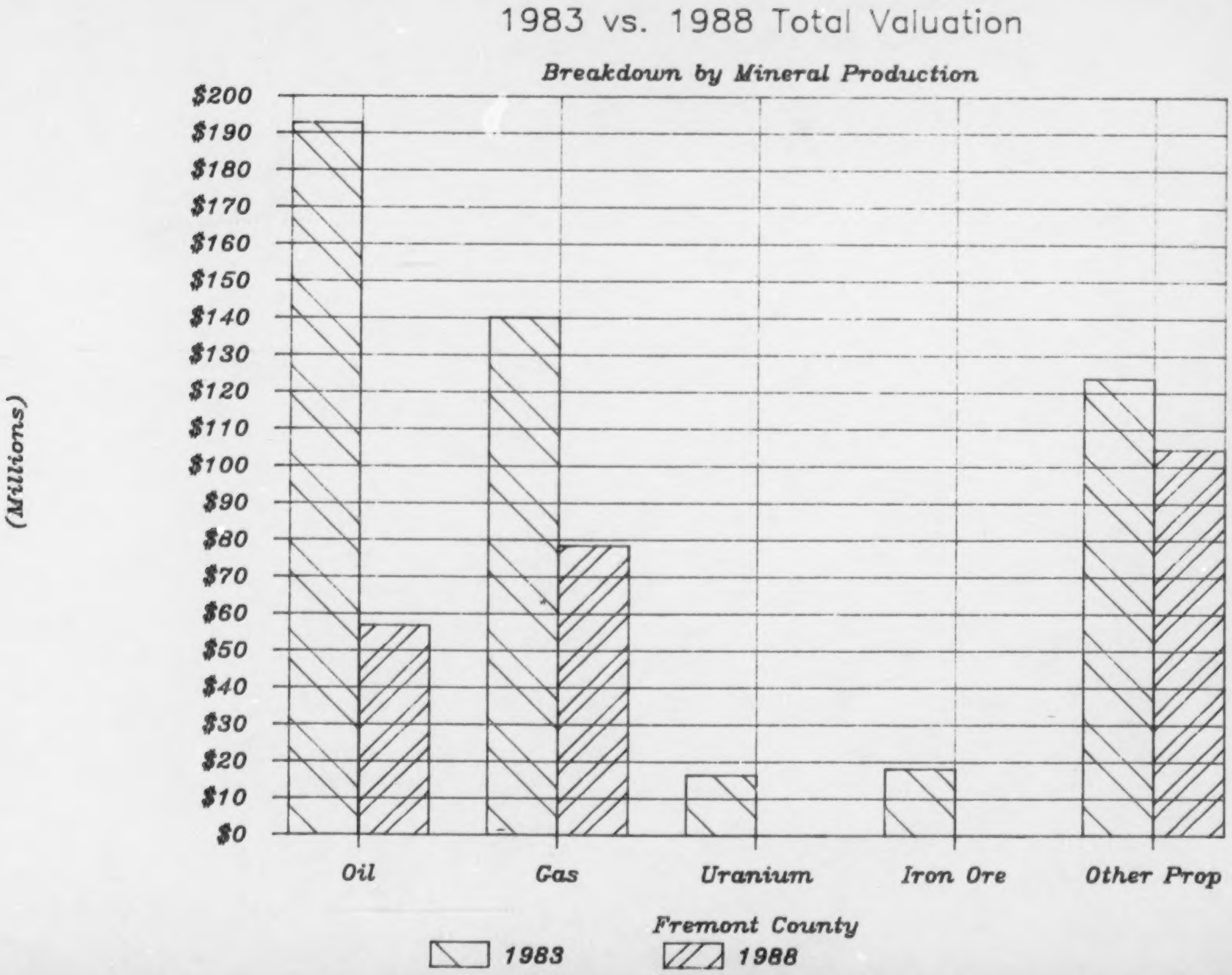


FREMONT COUNTY

Oil production rose in Fremont County by almost 319,000 barrels in 1987 and unit valuation went up $1.25.

Gas production rose by almost 10 million MCF, while unit valuation fell by $.92.

About 100 tons of uranium ore were produced in the County in 1987.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
(Millions)
$200
$190
$180
$170
$160
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Uranium
Iron Ore
Other Prop
Fremont County
1983
1988

GOSHEN COUNTY

Goshen County mineral production consists of a small amount of oil and construction materials.

Its 1988 mineral valuation of 257,000 dollars was one of only two Wyoming counties with mineral production of less than 1 million dollars.

The county's oil is from low production stripper wells and has the higest unit valuation in the State, $17.57 per barrel for 1988, a rise of $3.45 from 1987.

The shutting in of oil wells due to declining prices has struck stripper wells first, so Goshen County's oil production, small to begin with, will shrink further.

HOT SPRINGS COUNTY

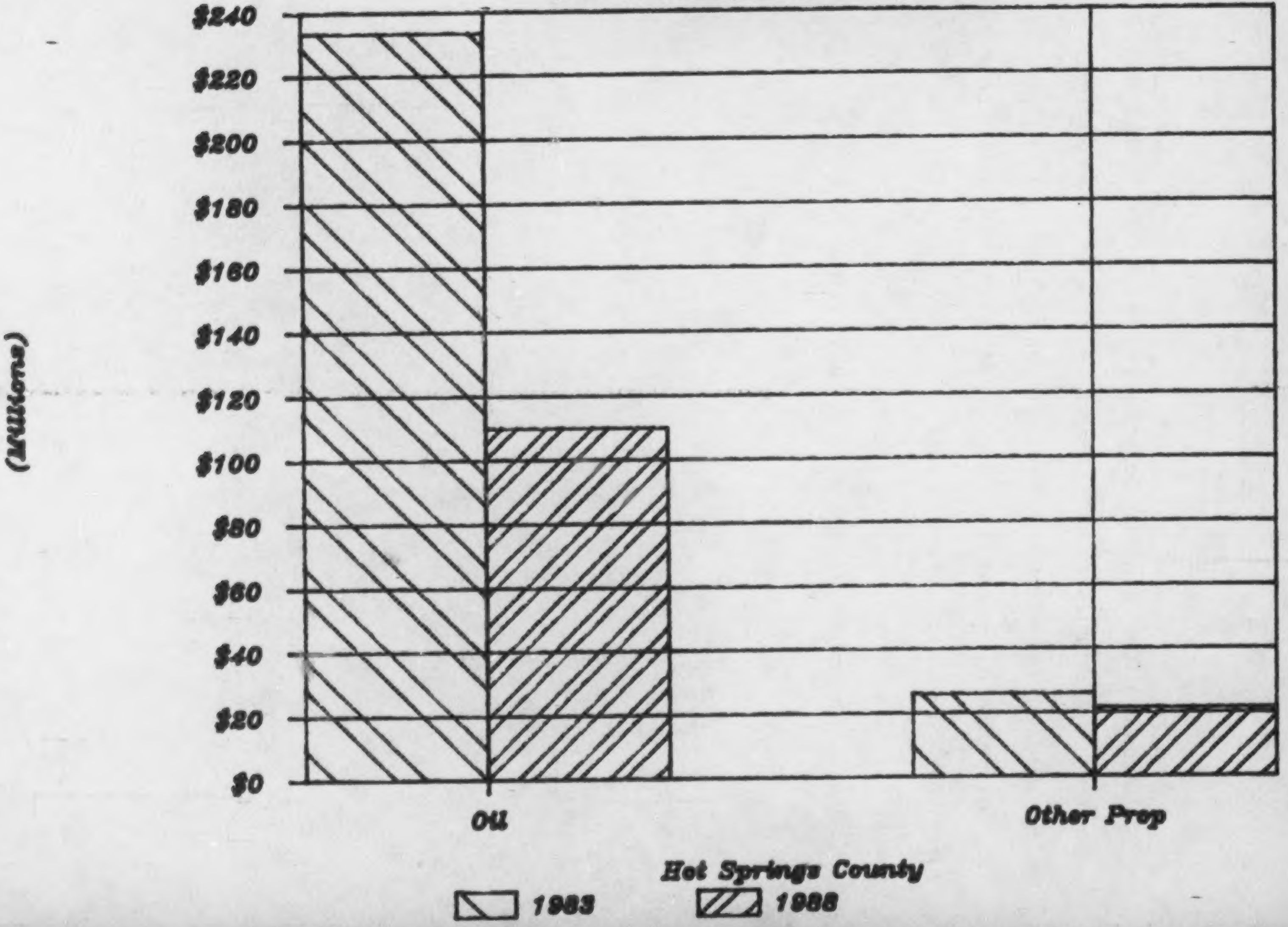
Oil accounts for 99% of Hot Springs county's mineral valuation. In 1987 production rose slightly by 52,000 barrels, and a $3.73 per barrel rise in price resulted in a valuation increase of over 21 million dollars.

Coal production at the Grass Creek Mine was 10,227 tons. The company has filed applications to increase capacity to 700,000 tons over the next several years.

Natural gas production in the county held fairly steady.

1983 vs. 1988 Total Valuation

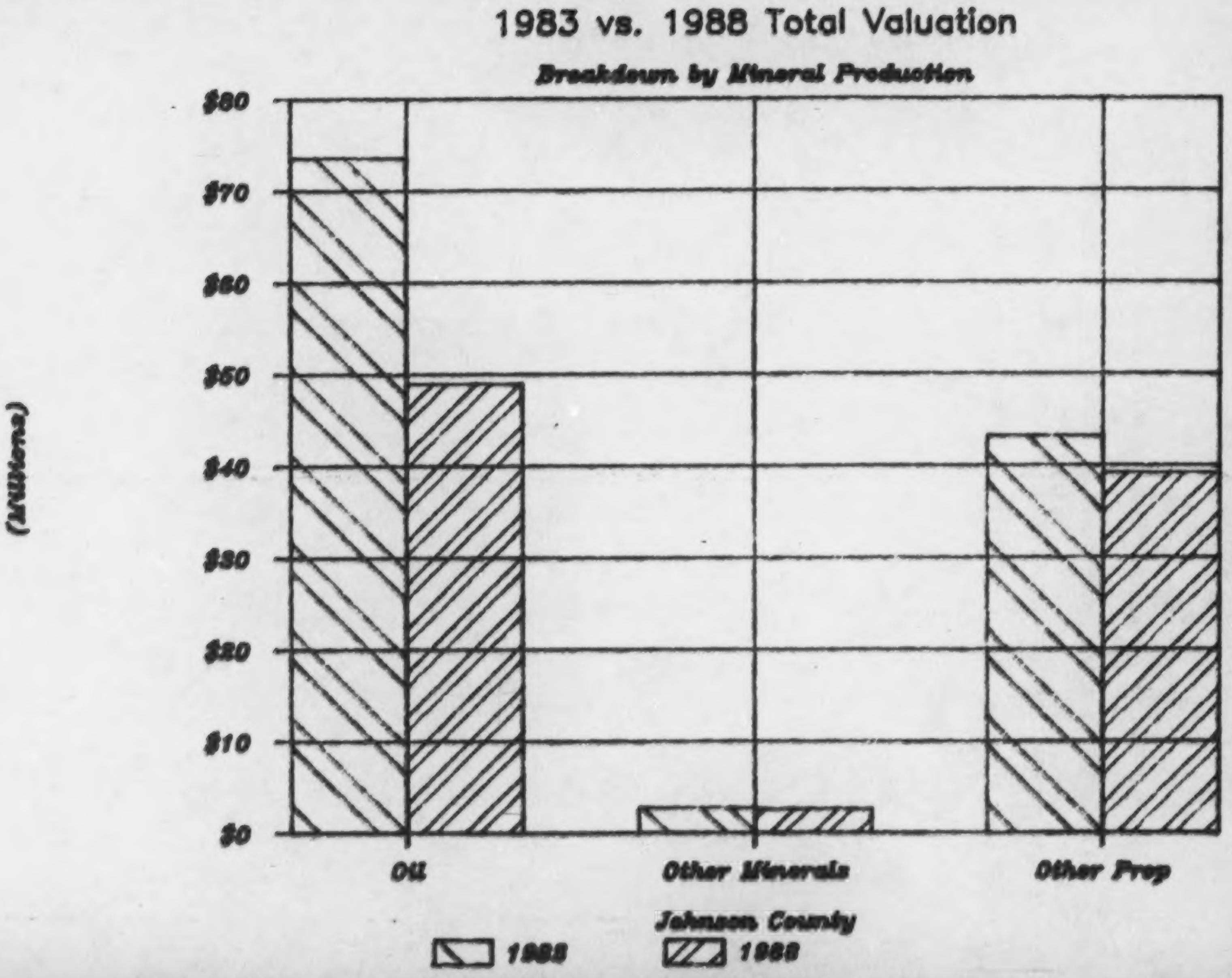
Breakdown by Mineral Production



JOHNSON COUNTY

Oil accounted for 95% of Johnson County's mineral valuation in 1988. Production held nearly steady, but valuation rose by over 3 million dollars due to a $1 increase in unit valuation.

Other significant mineral products of the county were 1,300,000 MCF of gas and 99,000 tons of bentonite.



1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

LARAMIE COUNTY

In 1987 oil production accounted for 70% of Laramie County's mineral valuation, with construction materials accounting for all the rest except for a small amount of natural gas.

Oil production in the county fell by 30,000 barrels, but valuation increased by $2.84 per barrel.

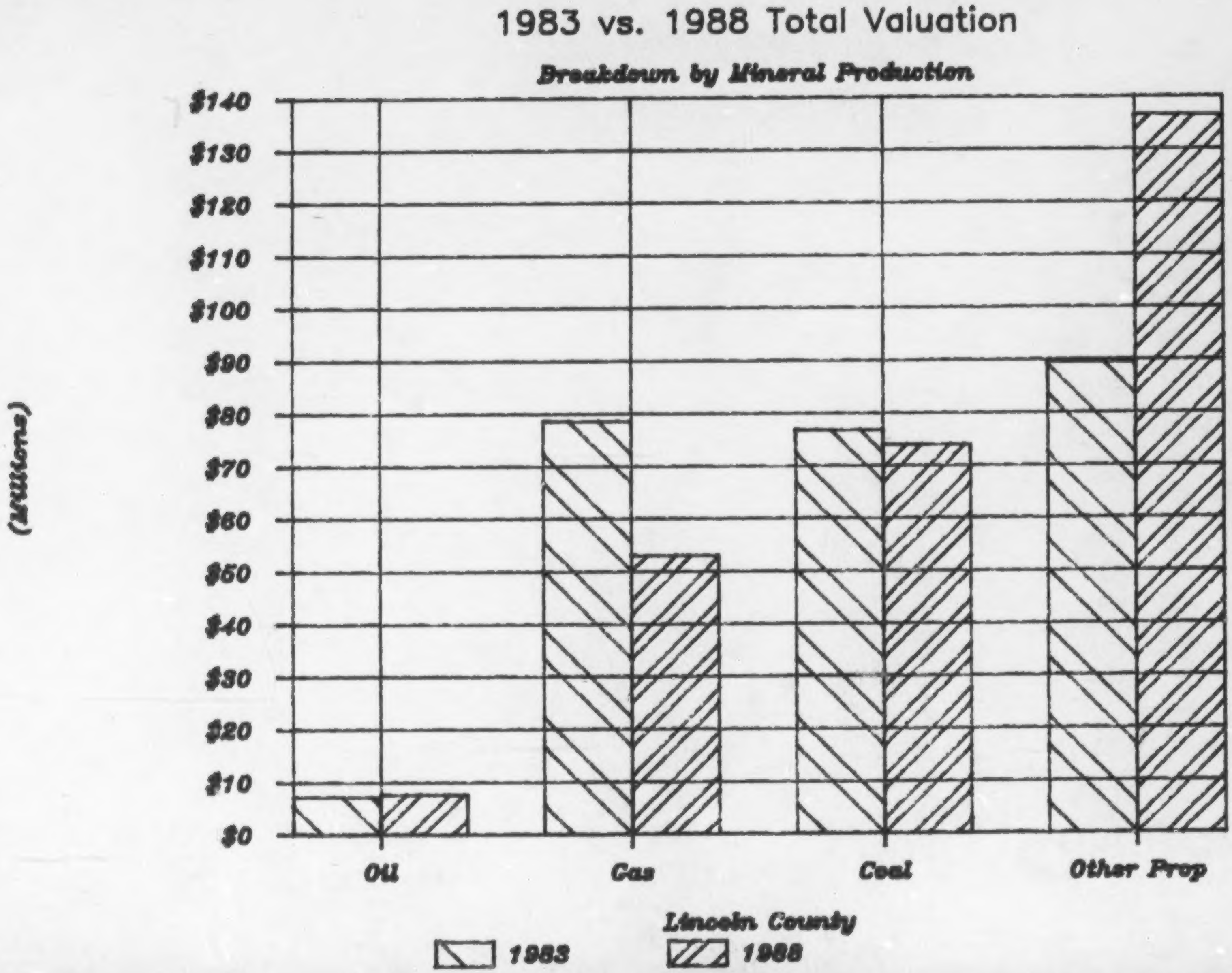
The county total of 3,254,000 dollars for construction material valuation reflects the last phases of MX related development in the county.

LINCOLN COUNTY

Natural gas accounted for 39% of Lincoln County's 135 million dollar mineral valuation in 1988. The county's location on the eastern edge of the Overthrust Belt accounts for its large gas production.

Lincoln County has been a coal producer for 110 years. In 1987, 4,200,000 tons were mined, a small increase over 1986. Additional production from the FMC Skull Point Mine and possibly a Rocky Mountain Energy operation should raise this total in future years.

County oil production rose very slightly in 1986. The Exxon LaBarge Project has begun production, and has sparked a rise in Lincoln County gas output.

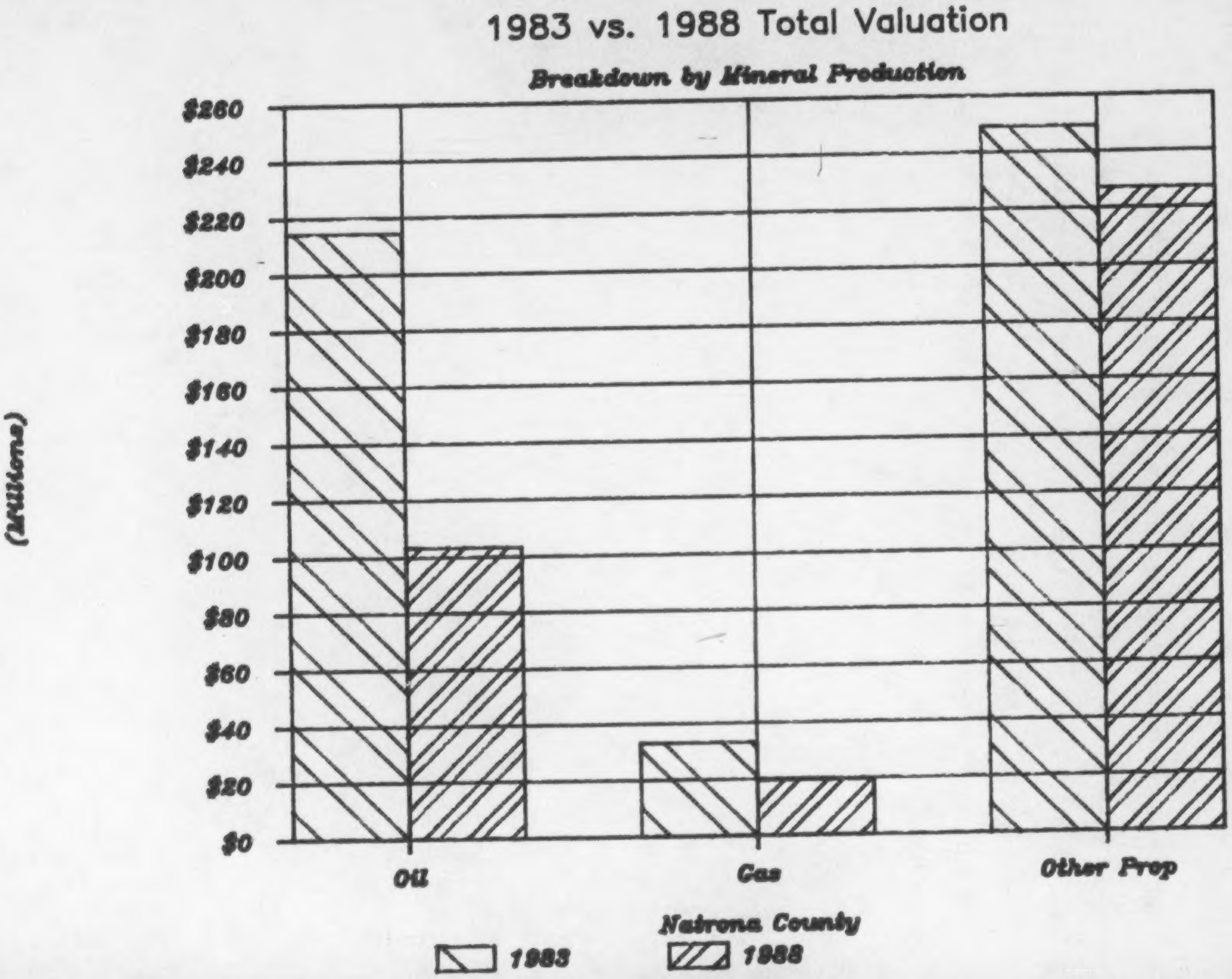

1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
(Millions)
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Coal
Other Prop
Lincoln County
1983
1988

NATRONA COUNTY

Oil production in Natrona County fell by over 340,000 barrels in 1987. A drop in unit valuation of $2.52 resulted in a loss of over 87 million dollars in valuation.

Bentonite production fell in 1987, but considering the wide fluctuations in the bentonite industry, no trends are discernable.

Other county mineral products are sodium sulfate and construction materials.



1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

NIOBRARA COUNTY

Niobrara County's most important mineral commodity is crude oil. In 1988 crude oil accounted for 96% of the county's mineral valuation. Production fell slightly from 1,032,565 to 917,783 barrels, and a unit value increase of $1.44 was still reflected in a valuation drop of over 300,000 dollars.

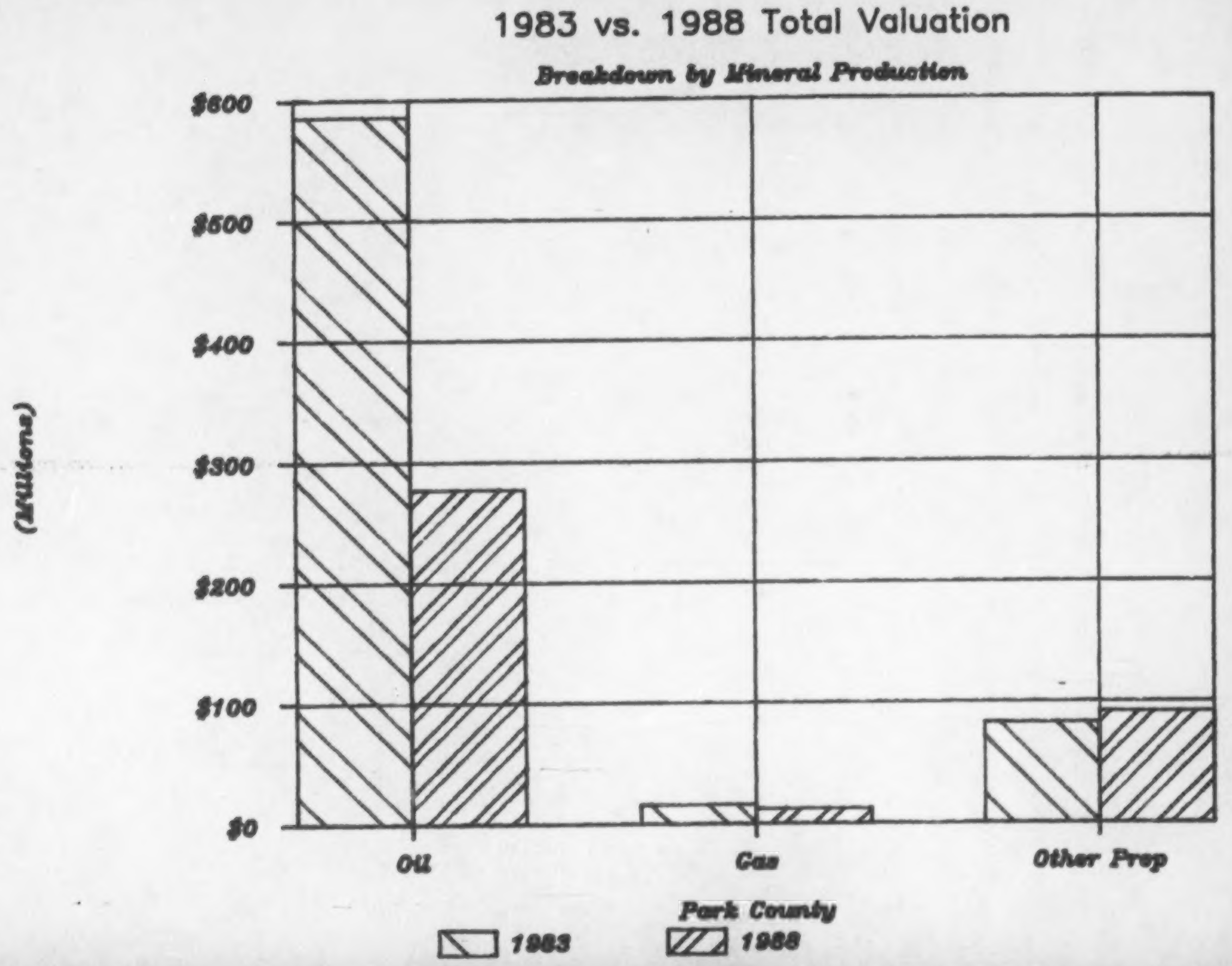
Natural gas production rose by over 58,000 MCF, but such a small quantity cannot reliably indicate longer range trends.

PARK COUNTY

Park County was in second place behind Campbell County in 1987 with an output of 20,000,000 barrels of oil. This was an increase of 700,000 barrels compared to 1986. Production will continue to decline in the long run as old giant fields like Oregon Basin continue to be depleted, regardless of market conditions. Oil production accounted for 95% of the county's mineral valuation and 72% of total valuation. Unit valuation rose by $2.48 per barrel.

Gas production rose by 3,100,000 MCF.

Gypsum production was 649,000 tons in 1987, the same as 1986.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
$600
$500
$400
$300
$200
$100
$0
(Millions)
Oil
Gas
Other Prop
Park County
1983
1988

PLATTE COUNTY

The county's mineral valuation, $1,176,232, comes from Guernsey Stone's dolomite quarry, Basin Engineering's marble quarry and various sand and gravel operations.

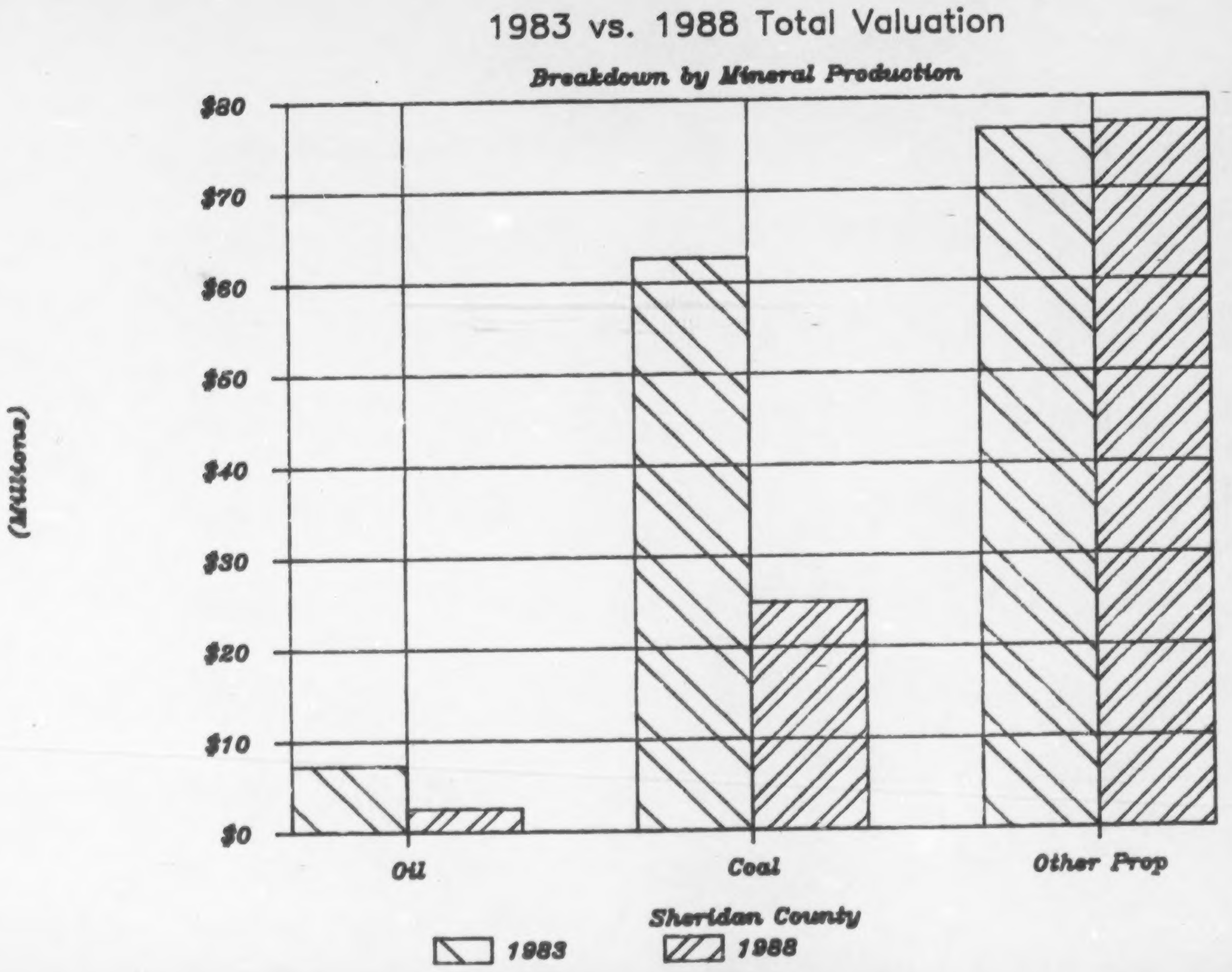
SHERIDAN COUNTY

Coal production in Sheridan County rose by over 1,200,000 tons in 1987. Coal unit valuation decreased by $1.02 per ton.

The county's coal production came from Peter Kiewit and Sons' Big Horn Mine. The Big Horn Mine will sharply curtail activity when its contract with Commonwealth Edison expires at the end of 1988. Ninty-one percent of the mineral valuation of the county comes from this mine's production.

Sheridan County's small oil production decreased by 14,000 barrels in 1987.

Construction materials, including scoria, accounted for 17,309 dollars of valuation.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
(Millions)
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Coal
Other Prop
Sheridan County
1983
1988

SUBLETTE COUNTY

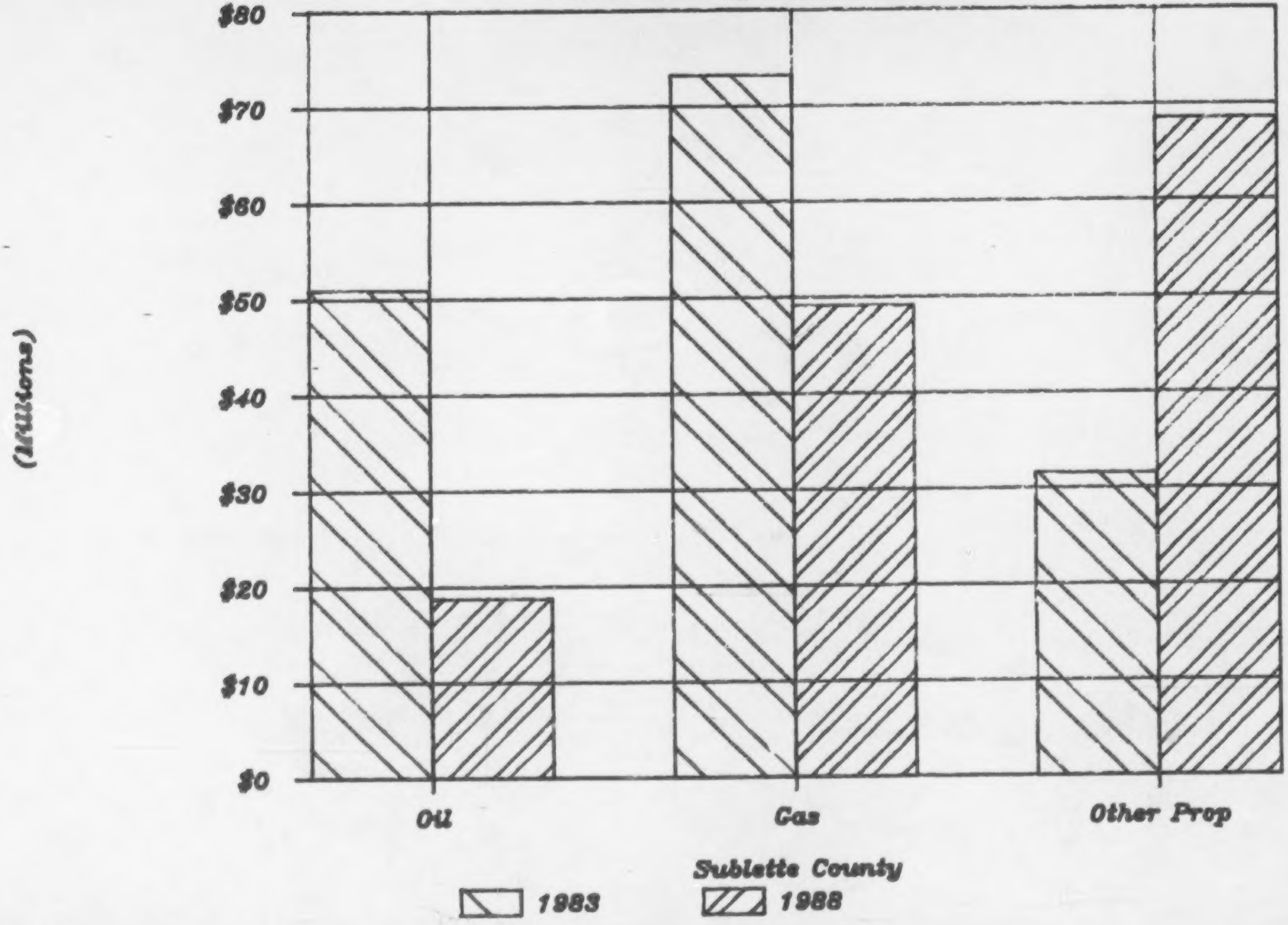
Natural gas was Sublette County's most important mineral product in 1987, with over 38 million MCF produced with a valuation of over 49 million dollars.

As the Riley Ridge Project comes on line Sublette County's gas production will show dramatic increases.

Oil production rose in 1987 with a gain of 186 thousand barrels. Liquids stripped at the new processing plants, plus the possibility of new Overthrust discoveries, should continue this upward trend.

1983 vs. 1988 Total Valuation

Breakdown by Mineral Production



SWEETWATER COUNTY

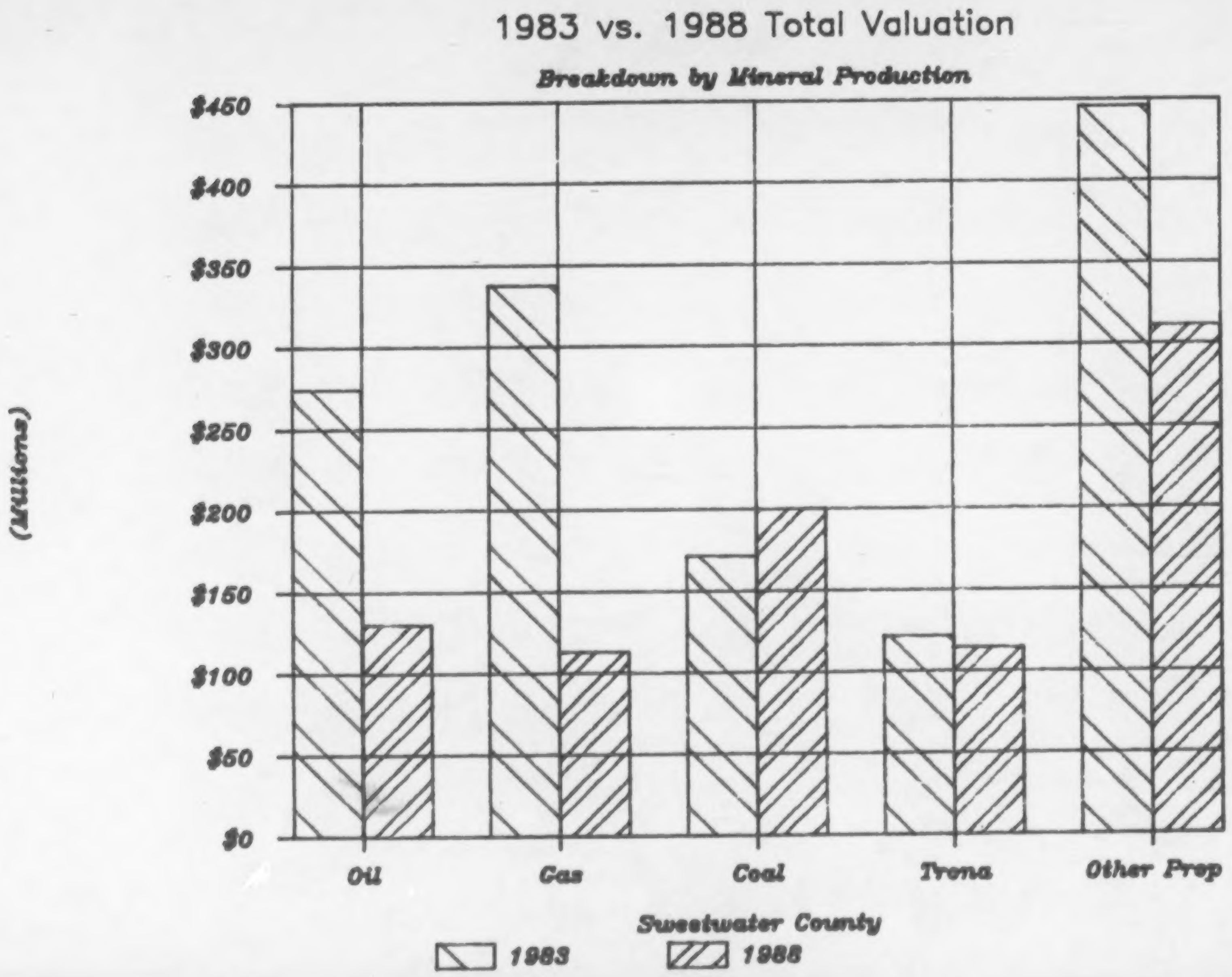
Sweetwater County has significant production of oil, gas, coal, and trona and these plus sand and gravel combine for a total valuation on production of over 552 million dollars, second largest in the State.

Coal is the most valuable product, accounting for 35% of the County mineral valuation and 22% of the total valuation. Production in 1987 was down 2 million tons.

Natural gas is the fourth most valuable mineral commodity in the county, behind oil, coal and trona, accounting for 13% of the mineral valuation.

Sweetwater County is the fourth largest oil producer in the State. Production of 7,675,000 barrels was responsible for 24% of the county mineral valuation in 1987.

Trona is produced only in Sweetwater County, and is third behind coal, gas, and oil in valuation at $114,546,971 dollars. Production was up by over 500,000 tons in 1987, and further increases are likely.


1983 vs. 1988 Total Valuation
Breakdown by Mineral Production
$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
(Millions)
Oil
Gas
Coal
Trona
Other Prop
Sweetwater County
1983
1988

TETON COUNTY

Teton County is one of two counties in Wyoming which had no oil or gas production in 1987. Several exploration leases and permits have been let in the county, and several wells have been drilled in the past but whether any production will result from this activity remains to be seen.

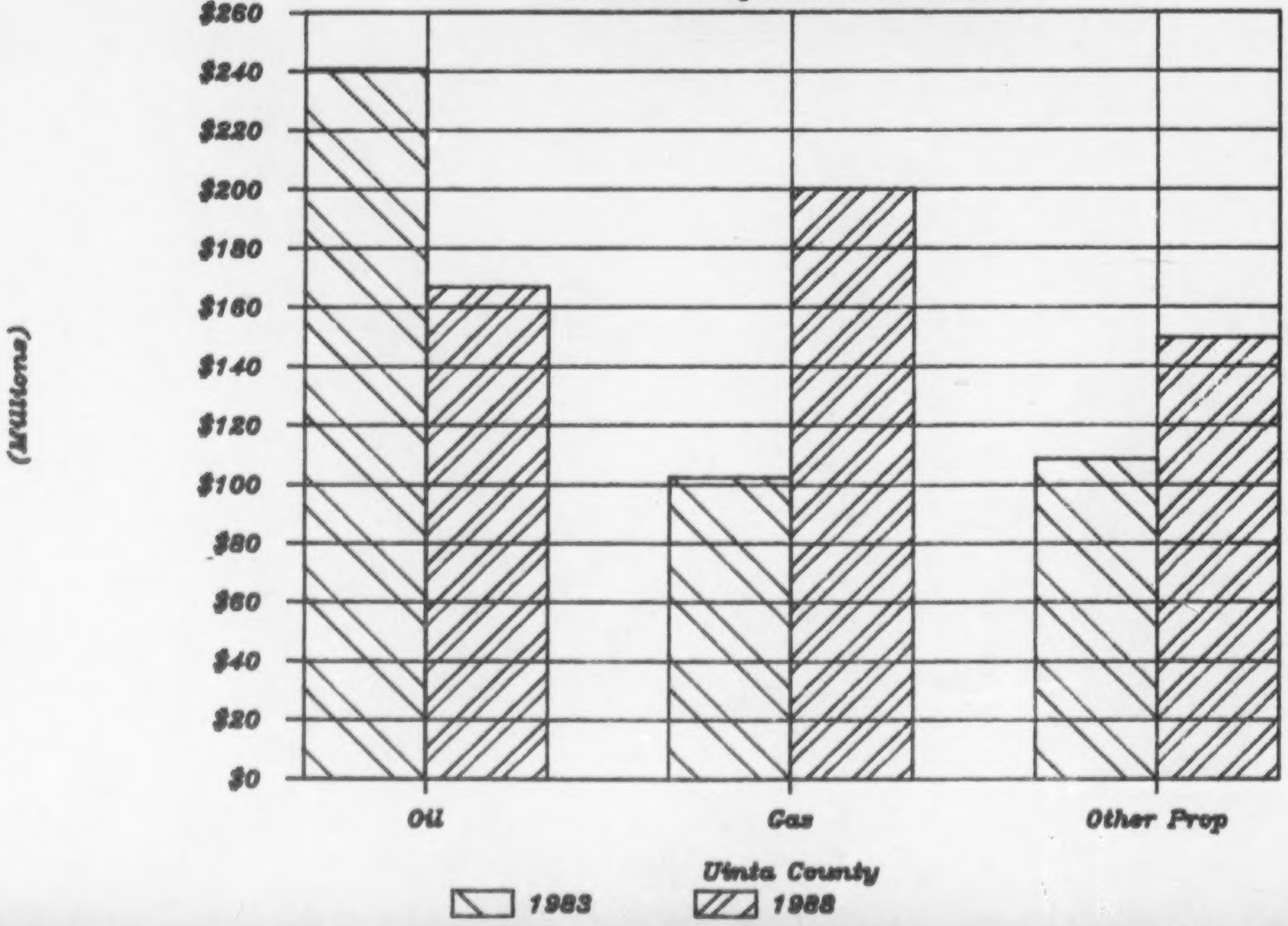
The only minerals produced in Teton County in 1987 were 120,154 dollars worth of sand and gravel.

UINTA COUNTY

Uinta County has been the main benefactor of Overthrust Belt oil and gas activity. In 1970 the county produced 31,000 barrels of crude oil while in 1986 the total was 10,507,255 barrels, third in the State behind Campbell and Park Counties. The increase in natural gas production has been even more dramatic, from 3.4 million MCF to 115 million MCF, the largest total in the State. Uinta County valuation on oil and gas production was 71% of the total county valuation in 1987.

1983 vs. 1988 Total Valuation

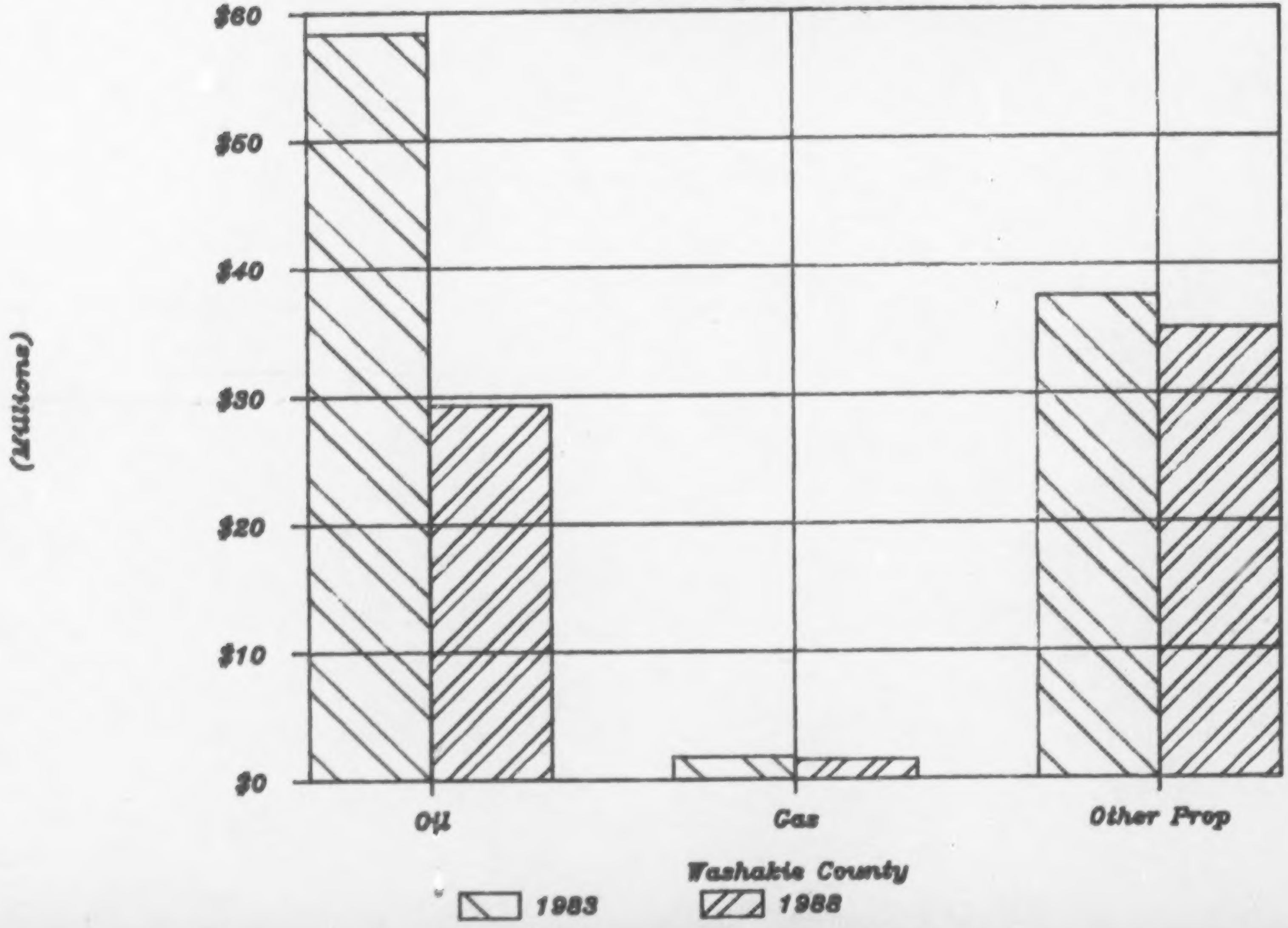
Breakdown by Mineral Production



WASHAKIE COUNTY

Oil production showed an decrease of 54,000 barrels in 1987. Natural gas production fell by 400,000 MCF.

Bentonite production in the county was 18,186 tons.



1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

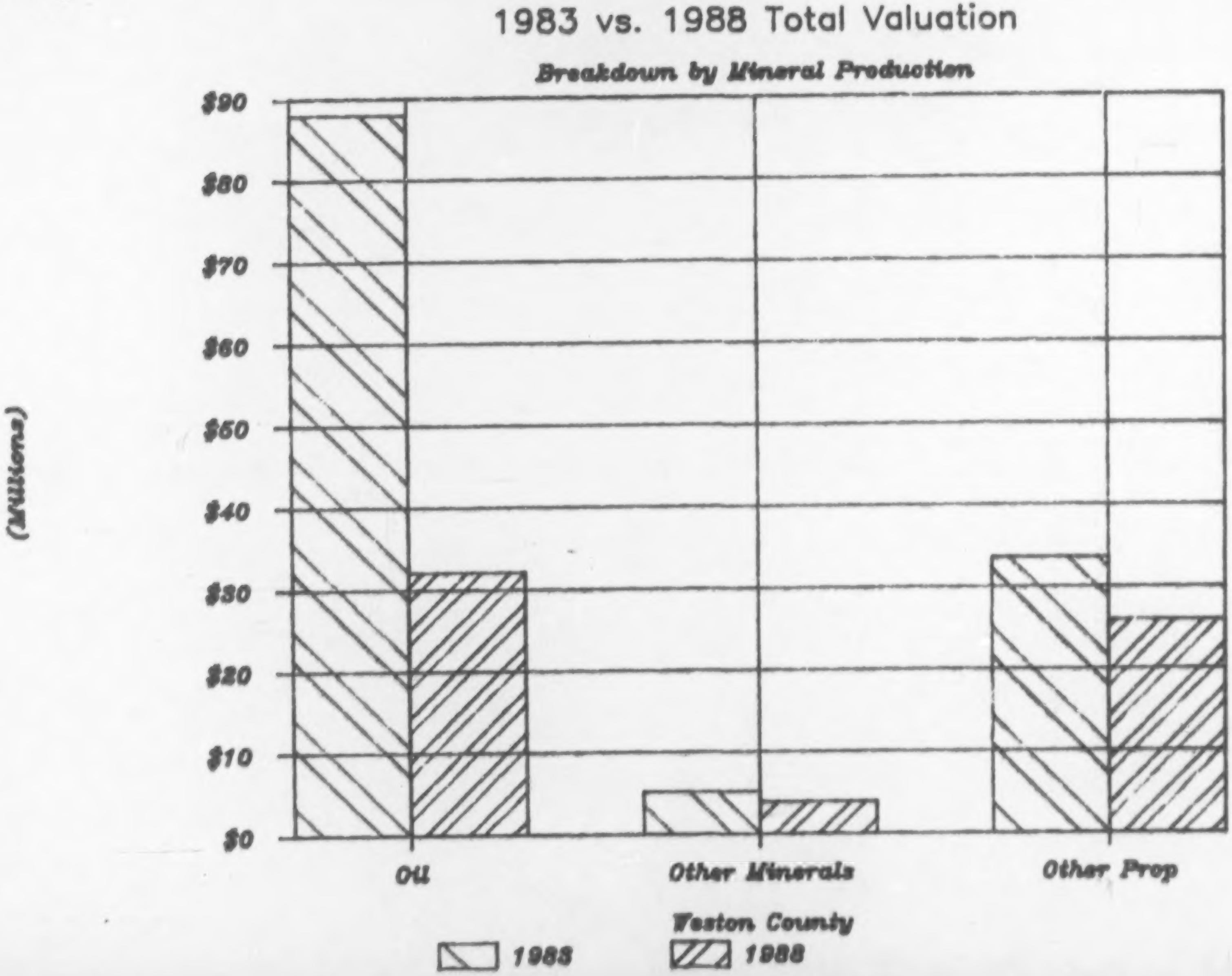
Washakie County

WESTON COUNTY

Oil production in the county dropped by 191,000 barrels in 1987, continuing a trend first appearing in the 1960's. Considering the age of Weston County's oil fields, no reversal of this downward slope is likely.

Natural gas production held almost steady, but unit valuation fell .41 cents.

Bentonite production in the county rose by about 78,000 tons.



1983 vs. 1988 Total Valuation

Breakdown by Mineral Production

WYOMING MINERAL PRODUCTION AND VALUATION

1983-1988

1983 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	$29.77	$	$	$	$	$	$	$1.75
Big Horn	27.10	2.67				4.28		2.90
Campbell	27.79	2.26	8.14					
Carbon	31.46	4.18	23.96	52.10				
Converse	32.48	2.58	6.15	9.88+clean-up*				
Crook	27.67	.19				4.11		
Fremont	28.50	3.78		8.55	3.50			
Goshen	31.41							
Hot Springs	27.43	2.12	14.25			3.95		
Johnson	30.65	2.42				3.33		
Laramie	32.40							
Lincoln	30.04	3.59	17.81					
Natrona	31.53	4.00		6.37		4.02		
Niobrara	32.17	2.60						
Park	26.67	3.15				4.45		2.90
Platte								
Sheridan	31.51	2.60	20.90					
Sublette	31.98	1.85						
Sweetwater	31.44	3.24	18.49	clean-up*			12.07	
Teton								
Uinta	30.36	3.11						
Washakie	28.37	.70				2.45		
Weston	32.43	2.83				4.92		
State Average	$29.45	$3.22	$10.71	$21.69	$3.50	$4.10	$12.07	$2.82
Increase or Decrease Over	-$2.81	+$.45	+$.55	+$4.80	-$.40	-$.24	-$.44	-$.02

*Unit valuations for clean-up operations are low and are not included.

1983 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	142,134							15,954
Big Horn	4,885,623	2,206,205				442,310		149,501
Campbell	21,020,277	22,742,258	84,693,794					
Carbon	2,276,002	33,073,794	4,698,511	477,281				
Converse	5,656,935	9,700,928	2,176,113	1,222,423				
Crook	3,181,240	72,495				1,206,893		
Fremont	5,630,804	44,009,029		780,021	2,478,371			
Goshen	15,271							
Hot Springs	7,931,758	245,571	45,107			58,079		
Johnson	2,603,755	678,616				257,666		
Laramie	376,072							
Lincoln	387,109	24,909,235	4,040,464					
Natrona	7,115,626	6,146,366		183,447		65,320		
Niobrara	1,165,753	558,106						
Park	21,371,025	4,923,466						162,187
Platte								
Sheridan	183,928		2,922,014					
Sublette	1,553,027	37,115,648						
Sweetwater	8,820,056	91,672,428	9,326,761	385,196			10,542,417	
Teton								
Uinta	11,380,840	113,679,953						
Washakie	1,871,177	2,328,655				46,977		
Weston	2,852,569	1,593,794				154,751		
Total	110,420,981	395,656,547	107,902,764	3,049,068	2,478,371	2,183,865	10,542,417	327,642

1984 Assessed Valuation
on
1983 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,850,475							835,224	4,715,214
Big Horn	120,448,940	6,359,299				1,891,719			129,233,521
Campbell	588,720,660	66,788,168	658,110,780					122,948	1,313,742,556
Carbon	65,642,628	140,677,065	126,709,025	31,462,628				388,358	364,879,704
Converse	168,327,486	29,278,321	13,383,095	8,966,381				284,549	220,239,832
Crook	81,439,037	20,526				5,669,485			87,416,100
Fremont	146,344,073	179,911,049		8,156,276	7,435,113			210,861	342,057,372
Goshen	455,031							207,484	662,515
Hot Springs	196,814,952	617,156	778,096			217,796			198,483,350
Johnson	73,372,145	1,927,942				739,922			76,262,919
Laramie	11,314,085							1,767,431	13,081,516
Lincoln	8,972,770	94,767,928	79,611,688					214,618	183,567,034
Natrona	207,241,481	21,788,770		2,220,953		329,870			232,070,629
Niobrara	34,243,696	1,477,112						596,834	36,317,642
Park	516,936,805	13,119,504							530,734,962
Platte								1,425,928	1,425,928
Sheridan	5,430,457		68,926,516					138,725	74,446,134
Sublette	46,159,909	78,318,765						33,451	124,512,125
Sweetwater	254,396,894	254,309,594	203,528,935	30,816			104,500,003	158,871	816,925,113
Teton								120,020	120,020
Uinta	322,091,117	362,100,919						626,048	684,818,084
Washakie	48,162,698	1,781,238				126,838			50,143,418
Weston	86,053,595	5,028,921				771,191			91,930,504
Total	2,986,418,934	1,258,272,277	1,151,048,135	50,837,054	7,435,113	9,746,821	104,500,003	9,521,855	5,577,786,192
% of Total	54	22	20	1	.02	.03	2	.03	

1984 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	27.09					4.28		1.85
Big Horn	24.65	2.88						3.00
Campbell	28.01	2.94	7.77					
Carbon	28.84	4.25	26.97	65.92				
Converse	29.76	3.02	6.15	7.33				
Crook	25.60	.28				4.70		
Fremont	25.99	4.09		10.45	3.00			
Goshen	29.80							
Hot Springs	24.81	2.51	17.25			3.75		
Johnson	28.18	2.84						
Laramie	30.08							
Lincoln	23.18	3.80	19.70					
Natrona	29.12	3.55		12.11		5.05		
Niobrara	29.37	2.65						
Park	24.19	2.66						3.00
Platte								
Sheridan	29.52		23.59					
Sublette	29.72	2.11						
Sweetwater	28.84	2.77	21.82	.08	—		9.91	
Teton								
Uinta	28.30	3.19						
Washakie	25.74	.76				2.70		
Weston	30.17	3.16				4.98		
State Average	27.04	3.18	10.67	16.67	3.00	4.46	9.91	2.94
Increase or Decrease Over	-$2.41	+$.04	-$.04	-$5.02	-$.050	+$0.36	-$2.16	+$0.12

1984 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	146,587							13,176
Big Horn	5,223,277	1,687,091				949,113		159,730
Campbell	23,907,964	31,151,648	102,779,093					
Carbon	2,552,864	46,292,397	5,081,638	473,556				
Converse	8,098,349	10,502,161	2,675,630	542,662				
Crook	4,196,033	67,057				1,508,574		
Fremont	5,242,880	39,504,795		619,908				
Goshen	15,472							
Hot Springs	7,951,624	295,865	42,578					
Johnson	2,756,696	649,711				290,848		
Laramie	559,992	66,702						
Lincoln	552,456	28,101,192	4,070,071					
Natrona	6,906,009	7,512,429				30,033		
Niobrara	1,041,252	353,028						
Park	19,999,970	6,875,358				927		152,776
Platte	199							
Sheridan	176,783		2,531,470					
Sublette	1,535,363	39,347,573						
Sweetwater	9,027,839	99,164,942	8,750,975				10,971,209	
Teton								
Uinta	12,674,088	132,091,642						
Washakie	1,943,938	2,468,899				175,404		
Weston	2,779,933	1,482,805				128,425		
Total	117,289,568	447,615,295	125,931,455	1,634,262		3,083,324	10,971,209	225,682

1985 Assessed Valuation
on
1984 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,799,760							985,447	4,785,207
Big Horn	127,436,160	4,818,245				4,289,489		583,214	137,127,108
Campbell	662,235,907	101,115,514	741,382,685					299,257	1,505,033,363
Carbon	71,758,227	205,245,306	129,817,519	19,050,265				281,196	426,152,513
Converse	236,842,608	33,233,768	15,919,999	663,365*				237,202	286,896,942
Crook	106,432,368	18,686				7,131,676		189,618	113,771,898
Fremont	135,586,297	152,070,988		2,037,271				151,539	289,846,095
Goshen	451,292							237,197	688,489
Hot Springs	195,430,483	796,383	742,986					36,026	197,005,878
Johnson	75,741,509	2,092,714				1,119,764		178,654	79,132,641
Laramie	16,270,544	143,464						2,224,427	18,638,435
Lincoln	13,336,422	110,741,244	82,099,203					112,201	206,289,070
Natrona	196,309,075	25,819,408				115,627		416,945	222,661,055
Niobrara	29,200,311	1,026,646						2,329,145	32,556,102
Park	476,860,428	21,776,213						635,573	499,272,214
Platte	5,929							1,537,383	1,543,312
Sheridan	4,962,760		64,411,755					121,408	69,495,923
Sublette	43,913,790	83,482,514						137,593	127,533,897
Sweetwater	254,065,361	265,003,530	196,543,308				95,792,777	558,708	811,963,684
Teton								82,987	82,987
Uinta	346,952,770	471,003,183						679,362	818,635,315
Washakie	49,520,424	1,686,133				410,960		47,553	51,665,070
Weston	81,051,919	4,656,864				1,037,003		104,162	86,849,948
Total	3,128,144,344	1,484,730,803	1,230,917,455	21,750,901*		14,108,737	95,792,777	12,162,129	5,987,627,146
% of Total	52	24.8	20.9	.3		.2	1.6	.2	

*Includes in-situ

1985 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	25.92							1.85
Big Horn	24.40	2.86				4.52		3.25
Campbell	27.70	3.25	7.21					
Carbon	28.11	4.43	25.55	40.23				
Converse	29.25	3.16	5.95	1.22				
Crook	25.37	.28				4.73		
Fremont	25.85	3.85		3.29				
Goshen	29.17							
Hot Springs	24.58	2.69	17.45					
Johnson	27.48	3.22				3.85		
Laramie	29.06	2.15						
Lincoln	24.14	3.94	20.17					
Natrona	28.43	3.44				3.85		
Niobrara	28.04	2.91						
Park	23.84	3.17						3.25
Platte	29.79							
Sheridan	28.07		25.44					
Sublette	28.60	2.12						
Sweetwater	28.14	2.67	22.46				8.73	
Teton								
Uinta	27.38	3.57						
Washakie	25.47	.68				2.51		
Weston	29.16	3.14				8.07		
State Average	26.67	3.32	9.77	13.31		4.58	8.73	2.95
Increase or Decrease Over	-.37	+.14	-.90	-3.36		+.12	-1.18	+.01

1985 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	153,666							
Big Horn	4,654,964	1,447,968				901,561		175,512
Campbell	24,825,561	25,915,533	109,202,078					
Carbon	2,661,154	45,715,485	3,180,375	241,057				
Converse	8,888,482	33,202,177	3,151,197	225,323				
Crook	5,487,568	66,652				1,176,096		
Fremont	4,859,046	39,721,326		153,587				
Goshen	23,417							
Hot Springs	7,211,881	218,489	31,208					
Johnson	2,065,602	520,366				254,831		
Laramie	580,271	64,969						
Lincoln	539,375	23,639,001	4,320,225					
Natrona	10,833,972	7,811,090						
Niobrara	956,203	323,606						
Park	20,245,002	5,650,095				927		172,652
Platte								
Sheridan	213,002	9,926	2,362,539					
Sublette	1,479,452	27,180,096						
Sweetwater	8,307,887	80,251,435	12,857,582				10,776,304	
Teton								
Uinta	13,714,256	116,540,107						
Washakie	2,036,387	1,927,947				72,556		
Weston	2,435,386	1,820,346				148,642		
Total	122,172,534	412,026,614	135,105,204	619,967		2,554,613	10,776,304	348,164

1986 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	24.67							
Big Horn	23.46	2.38				3.98		3.25
Campbell	24.16	2.46	6.75					
Carbon	23.66	3.67	26.11	50.21				
Converse	25.76	1.22	6.01	19.34				
Crook	23.42	.29				2.93		
Fremont	24.04	3.75		29.61				
Goshen	25.70							
Hot Springs	23.80	2.66	19.59					
Johnson	25.27	2.99				2.18		
Laramie	25.75	1.60						
Lincoln	24.75	3.61	20.03					
Natrona	16.99	3.59				2.15		
Niobrara	25.41	2.94						
Park	23.07	2.80				4.30		3.25
Platte								
Sheridan	24.13	2.46	24.71					
Sublette	25.01	2.15						
Sweetwater	25.88	2.71	21.16				8.94	
Teton								
Uinta	23.09	3.43						
Washakie	24.39	.62				2.90		
Weston	25.64	2.76				4.11		
State Average	23.46	3.01	9.30	30.96		3.28	8.94	3.25
Increase or Decrease Over 1985	-3.21	-.31	-.47	+17.65		-1.30	+.21	+.30

1986 Assessed Valuation
on
1985 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,791,481							93,079	3,884,560
Big Horn	109,186,837	3,444,593				3,586,624		608,765	116,826,819
Campbell	599,786,073	63,709,828	736,704,572					91,993	1,400,292,466
Carbon	62,962,049	167,596,863	83,053,397	12,103,697				362,620	326,078,626
Converse	228,999,961	40,639,795	18,952,799	4,357,686				126,106	293,076,347
Crook	128,537,254	19,048				3,444,670		374,925	132,375,897
Fremont	116,801,851	149,013,458		454,773				118,060	266,388,142
Goshen	601,758							74,279	676,037
Hot Springs	171,621,268	585,372	611,365					24,662	172,842,667
Johnson	77,463,336	1,557,267				554,770		186,490	79,761,863
Laramie	14,944,512	103,646						1,741,915	16,790,073
Lincoln	13,349,400	85,430,430	86,523,549					209,837	185,513,216
Natrona	184,112,301	28,070,415				65,663		335,266	212,583,645
Niobrara	24,297,505	949,871						48,729	25,296,105
Park	467,007,353	15,843,071				17,208		839,922	483,707,554
Platte								1,902,628	1,902,628
Sheridan	5,139,091	24,391	58,388,953					106,661	63,659,096
Sublette	37,000,068	58,355,766						343,891	95,699,725
Sweetwater	215,013,562	217,083,093	272,126,000				96,389,980	750,314	801,362,949
Teton								179,052	179,052
Uinta	316,630,268	399,602,011						538,554	716,770,833
Washakie	49,668,606	1,187,277				210,412		34,342	51,100,637
Weston	62,446,786	5,029,423				611,116		67,626	68,154,951
Total	2,889,361,320	1,238,245,618	1,256,360,63	16,916,156		8,490,463	96,389,980	9,159,716	5,514,923,888
% of Total	52	- 22	23	.4		.3	2	.3	

1987 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	116,973						3,775
Big Horn	4,098,535	1,534,150			342,769		185,818
Campbell	26,861,409	29,837,276	110,153,389				
Carbon	2,971,071	44,922,065	2,162,477	94,795			
Converse	6,950,103	21,454,649	4,436,159	40,730			
Crook	4,656,405	69,922			1,414,532		
Fremont	4,806,517	38,765,119		100,349			
Goshen	12,841						
Hot Springs	7,470,631	230,383	10,227				
Johnson	3,131,029	1,379,407		8,213	99,615		
Laramie	435,421	2,313					
Lincoln	633,587	32,176,044	4,215,533				
Natrona	6,300,511	7,463,044			10,718		
Niobrara	917,783	606,561					
Park	20,099,143	8,647,895					165,073
Platte							
Sheridan	153,546		1,180,781				
Sublette	1,197,534	38,660,921					
Sweetwater	7,675,368	61,813,951	10,507,255			12,422,255	
Teton							
Uinta	10,507,255	113,219,173					
Washakie	2,024,187	3,451,992			18,186		
Weston	1,961,565	1,627,957			220,361		
Total	112,981,314	407,862,822	132,753,011	244,087	2,159,077	12,422,255	354,666

1988 Assessed Valuation
on
1987 Production

County	Oil	Gas	Coal	Uranium	Bentonite	Trona	Misc.	Total
Albany	1,846,769						393,033	2,239,802
Big Horn	58,691,199	2,698,040			1,3277,430		738,058	63,305,227
Campbell	421,905,618	41,604,238	657,613,326				4,911	
Carbon	45,292,016	120,068,003	37,368,663	3,700,797			129,048	206,558,527
Converse	112,823,858	27,103,884	17,102,688	80,608			114,830	157,227,868
Crook	69,050,501	18,604			5,686,440		141,221	74,896,766
Fremont	66,862,480	70,153,542		2,764,045			110,962	139,891,029
Goshen	225,585						32,120	237,705
Hot Springs	110,023,854	621,526	128,451				239,990	111,013,821
Johnson	48,992,186	2,172,076		4,607	400,454		80,669	51,649,992
Laramie	7,356,058	578					3,254,020	10,615,656
Lincoln	7,600,974	53,057,684	73,990,766				51,205	134,700,629
Natrona	103,387,382	19,662,777			43,085		311,500	123,404,824
Niobrara	14,557,357	610,155					53,674	15,221,186
Park	277,461,908	12,763,291					761,279	290,986,478
Platte							1,176,232	1,176,232
Sheridan	2,561,252		24,939,341				17,309	27,517,902
Sublette	18,754,210	49,125,122					42,876	67,922,208
Sweetwater	130,096,052	113,167,283	195,086,366			114,546,971	58,999	552,955,671
Teton							120,154	120,154
Uinta	167,065,232	200,261,783					100,427	367,437,442
Washakie	29,323,253	1,533,668			73,106		23,178	30,975,205
Weston	32,179,084	3,027,677			885,853		58,241	36,150,855
Total	1,726,036,828	717,673,951	1,006,229,601	6,550,057	8,677,541	114,546,971	7,804,343	3,587,543,292
% of Total	48	20	28	.2	.4	3	.4	

1988 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	15.79						1.92
Big Horn	14.32	1.76			4.02		3.80
Campbell	15.71	1.39	5.97				
Carbon	15.24	2.67	17.28	39.04			
Converse	16.23	1.26	3.86	1.98			
Crook	14.83	.27			4.02		
Fremont	13.91	1.81		27.54			
Goshen	17.57						
Hot Springs	14.73	2.70	12.56				
Johnson	15.65	1.57		.56	4.02		
Laramie	16.89	.25					
Lincoln	12.00	1.65	17.55				
Natrona	16.41	2.63					
Niobrara	15.86	1.01					
Park	13.80	1.48					3.80
Platte							
Sheridan	16.68		21.13				
Sublette	15.66	1.27					
Sweetwater	16.95	1.83	18.42			9.22	
Teton							
Uinta	15.90	1.74					
Washakie	14.49	.45			4.02		
Weston	16.40	1.86			4.02		
State Average	15.28	1.76	7.58	26.83	4.02	9.22	3.78
Increase or Decrease Over	+2.32	-.76	-1.09	-52.37	+.32	+.36	+.05

WYOMING MINERAL PRODUCTION ESTIMATES

1988-1992

1988 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	100,000						5,000
Big Horn	3,800,000	1,000,000			430,000		190,000
Campbell	25,000,000	26,000,00	114,470,000				
Carbon	2,500,000	45,000,000	2,500,000	180,000			
Converse	7,500,000	30,000,000	6,800,000				
Crook	4,000,000	50,000			1,420,000		
Fremont	5,000,000	40,000,000					
Goshen	20,000						
Hot Springs	6,800,000	150,000	30,000				
Johnson	3,000,000	450,000			125,000		
Laramie	450,000	50,000					
Lincoln	700,000	40,000,000	4,000,000				
Natrona	7,000,000	7,000,000			50,000		
Niobrara	1,000,000	250,000					
Park	20,000,000	10,000,000					175,000
Platte							
Sheridan	150,000	10,000					
Sublette	1,200,000	46,000,000					
Sweetwater	7,000,000	61,540,000	13,000,000			12,850,000	
Teton							
Uinta	10,200,000	120,000,000					
Washakie	1,580,000	1,500,000					
Weston	2,000,000	1,000,000			175,000		
Total	109,000,000	430,000,000	142,000,000	180,000	2,200,000	12,850,000	370,000

1989 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	100,000						6,000
Big Horn	3,800,000	1,000,000			430,000	193,000	
Campbell	25,000,000	26,000,000	108,470,000				
Carbon	2,500,000	45,000,000	1,500,000	190,000			
Converse	7,500,000	30,000,000	7,800,000				
Crook	4,000,000	50,000			1,420,000		
Fremont	5,000,000	40,000,000					
Goshen	20,000						
Hot Springs	6,300,000	150,000	30,000				
Johnson	3,000,000	450,000			125,000		
Laramie	450,000	50,000					
Lincoln	700,000	46,000,000	4,000,000				
Natrona	6,500,000	7,000,000			50,000		
Niobrara	1,000,000	250,000					
Park	20,000,000	10,000,000					177,000
Platte							
Sheridan	150,000	10,000					
Sublette	1,200,000	55,000,000					
Sweetwater	7,000,000	61,540,000	13,000,000			12,950,000	
Teton							
Uinta	10,200,000	12,500,000					
Washakie	1,580,000	1,500,000					
Weston	2,000,000	1,000,000					
Total	108,000,000	450,000,000	136,000,000	190,000	2,200,000	12,950,000	375,000

1990 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	100,000						7,000
Big Horn	3,800,000	1,000,000			500,000		197,000
Campbell	25,000,000	27,000,000	106,470,000				
Carbon	2,500,000	45,000,000	1,500,000	171,000			
Converse	7,000,000	35,000,000	7,800,000				
Crook	4,000,000	50,000			1,775,000		
Fremont	5,000,000	45,000,000					
Goshen	20,000						
Hot Springs	6,300,000	150,000	30,000				
Johnson	3,000,000	450,000			150,000		
Laramie	450,000	50,000					
Lincoln	700,000	50,000,000	4,000,000				
Natrona	6,000,000	7,000,000			75,000		
Niobrara	1,000,000	250,000					
Park	19,000,000	12,000,000					185,000
Platte							
Sheridan	150,000	10,000					
Sublette	1,200,000	61,000,000					
Sweetwater	7,000,000	63,540,000	13,000,000			13,000,000	
Teton							
Uinta	10,200,000	131,000,000					
Washakie	1,580,000	1,500,000					
Weston	2,000,000	1,000,000					
Total	106,000,000	475,000,000	134,000,000	171,000	2,500,000	13,000,000	389,000

1991 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	100,000						8,000
Big Horn	3,800,000	1,000,000			550,000		197,000
Campbell	21,000,000	27,000,000	107,470,000				
Carbon	2,500,000	45,000,000	1,500,000	183,000			
Converse	6,000,000	35,000,000	8,800,000				
Crook	4,000,000	50,000			2,075,000		
Fremont	5,000,000	45,000,000					
Goshen	20,000						
Hot Springs	6,300,000	150,000	30,000				
Johnson	3,000,000	450,000			175,000		
Laramie	450,000	50,000					
Lincoln	700,000	50,000,000	4,000,000				
Natrona	6,000,000	7,000,000			100,000		
Niobrara	1,000,000	250,000					
Park	18,000,000	12,000,000					185,000
Platte							
Sheridan	150,000	10,000					
Sublette	1,200,000	55,000,000					
Sweetwater	6,000,000	61,540,000	13,000,000			13,100,000	
Teton							
Uinta	10,200,000	12,500,000					
Washakie	1,580,000	1,500,000					
Weston	2,000,000	1,000,000					
Total	102,000,000	475,000,000	136,000,000	183,000	2,700,000	13,100,000	390,000

1992 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	100,000						9,000
Big Horn	3,800,000	1,000,000			600,000		200,000
Campbell	20,000,000	27,000,000	107,470,000				
Carbon	2,500,000	45,000,000	1,000,000	175,000			
Converse	5,500,000	35,000,000	8,800,000				
Crook	4,000,000	50,000			2,075,000		
Fremont	5,000,000	45,000,000					
Goshen	200,000						
Hot Springs	5,800,000	150,000	30,000				
Johnson	3,000,000	450,000			175,000		
Laramie	450,000	50,000					
Lincoln	700,000	50,000,000	4,000,000				
Natrona	5,500,000	7,000,000			100,000		
Niobrara	1,000,000	250,000					
Park	17,500,000	12,000,000					191,000
Platte							
Sheridan	150,000	10,000					
Sublette	1,200,000	55,000,000					
Sweetwater	6,000,000	61,540,000	12,500,000			13,400,000	
Teton							
Uinta	10,200,000	12,500,000					
Washakie	1,580,000	1,500,000					
Weston	2,000,000	1,000,000					
Total	99,000,000	475,000,000	135,000,000	175,000	2,750,000	13,400,000	400,000

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